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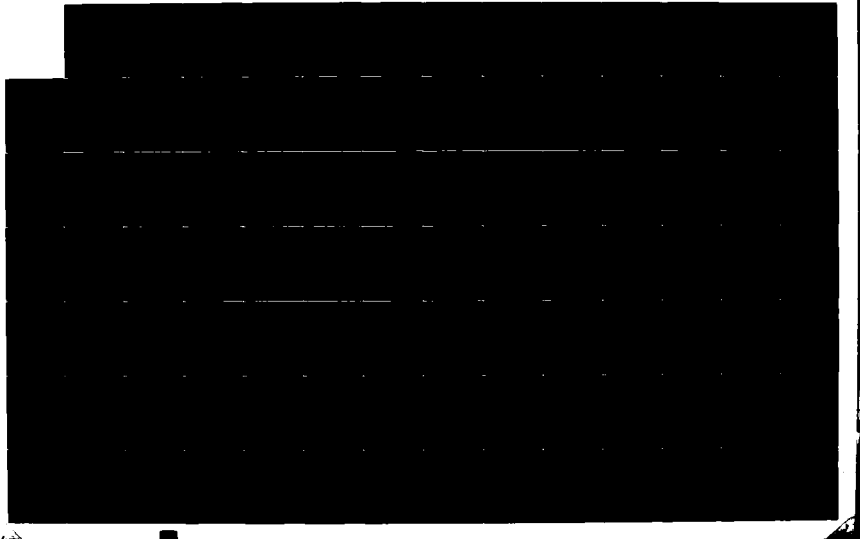

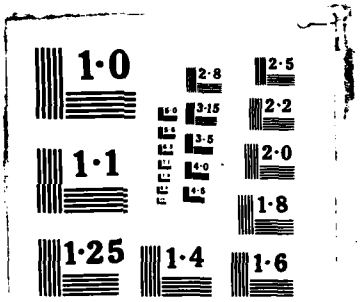
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This publication is intended to serve as a source of information about resources available in software technology to those who are planning such programs, with the hope that it will not only serve as a ready reference, but will also increase awareness of the many aspects of education in Ada and Software Engineering.

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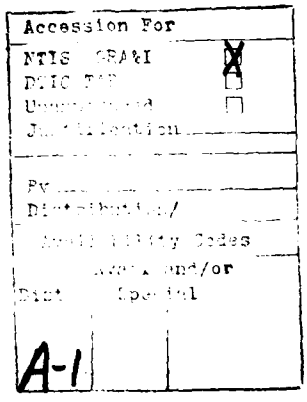

Prepared for:

Ada Joint Program Office
1211 South Fern St. (C107)
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Preface

Over the last twenty-five years software technology has made enormous strides. The Ada program serves as a focal point for the consolidation of state-of-the-art thinking about this technology. Proper use of the technology can contribute significantly to controlling the cost and improving the quality of software. However, this is a sophisticated technology, and its proper use depends upon sophisticated education and training for the people applying it. The effectiveness of the Ada programming language will be determined by the degree to which people are able to use it to implement software engineering practices in applications programming. A carefully planned education and training program, which teaches both fundamental software engineering concepts and the effective use of the Ada language, is therefore essential.

This publication is intended to serve as a source of information about resources available to those who are planning such programs, with the hope that it will not only serve as a ready reference, but will also increase awareness of the many aspects of education in Ada and Software Engineering.

1. INTRODUCTION

This catalog is a listing of courses, seminars, training programs, textbooks, etc. which provide education and training on the Ada Language and Software Engineering concepts. The Ada Joint Program Office (AJPO) has developed CREASE to report the availability of Ada Language educational resources and does not intend this to be a recommendation of any item included. Inclusion in CREASE does not constitute an endorsement by the AJPO or the U.S. Government.

The Ada Information Clearinghouse (AdaIC) surveyed industry, academia and government to obtain information on current Ada Language educational opportunities. CREASE Version 4.0 is composed of the responses to the survey conducted over the previous months. The information presented in CREASE Version 4.0 was provided by the offeror and does not represent the opinions of the Ada Joint Program Office or the Department of Defense. The catalog automation process necessitated the editing of some responses in order to comply with data formatting and field limitations. Every effort was made to preserve the content.

The responses are divided into three chapters: course offerings, textbooks and informational resources. The course offering chapter is divided into three sections: computer-aided instruction, lecture/seminars and videotape courses. Each of these sections is further divided into sub-sections which are in alphabetical order by 'offeror' and is arranged by companies, government, individuals and universities, when applicable. Publications listed in the textbook section appear in alphabetical order by text title.

The AJPO intends to update CREASE annually and would appreciate notification of changes or new offerings. For your convenience, information on how to be included in future CREASE editions is provided at the end of this catalog. Offerors of resources included in CREASE will receive a complimentary copy of the catalog; non-contributors requesting copies will be charged on a cost-reimbursement basis. Catalog ordering information is supplied at the back of this catalog.

The Ada Joint Program Office appreciates your interest in and support of the Department of Defense's Ada Program.

Questions and comments should be referred to the Ada Information Clearinghouse (AdaIC) at (703) 685-1477.

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2. COURSE OFFERINGS

The course chapter is divided into three sections: CAI, Lecture/Seminar and Videotape courses. Each of these sections is further divided into four sub-sections; Company, Government, Individual and University offerings, when applicable. Within these sub-sections the courses are in alphabetical order by offering organization name.

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2.1. Computer-Aided Instruction Courses

2.1.1. Company Offerings

Course listings start on the next page.

The Ada Programming Language

The ***objective*** is to provide introductory level, hands-on, interactive training in the Ada language and resident Ada environment.

The course is ***oriented*** toward management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include syntax and semantics, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include Authoring and Installation Guide. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: AdaSoft, Inc.
9300 Annapolis Road
Lanham, MD 20706

Offeror's Background:
AdaSoft is a two year old firm which specializes in the Ada programming language. The company develops commercial software products, performs consulting, develops custom software under contract, and offers training products and services.

Pricing information: available upon request. This CAI course is a ***product*** and is available for the IBM PC/XT/AT/PC DOS, DEC/MicroVAX/MicroVMS, DEC/VAX-11/7xx/8600/VMS/UNIX and DG/MV x000/AOS-VS and others. This course is ***available on*** 5 1/4" diskettes and standard magnetic tape. ***Available:*** now. For further information ***contact*** Jerry Horsewood at telephone (301)459-4696. The best time to call is 9:00 a.m.-5:00 p.m. EST.

Offeror's Comments :
The course will typically require 60 hours or more to complete. The authoring system used to develop the course is included with the course to permit the procuring organization to extend or modify the course to meet specific internal requirements.

Lessons on Ada on the VAX, Volumes I and II

The ***objective*** is to introduce Ada programming concepts (Volume I), build upon those concepts (Volume II) and present advanced Ada programming principles.

The course is ***oriented*** toward design concepts, management programming and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes course developers, program managers, programmers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include User's Guide and on-screen help files, a workbook and a study guide. The MicroVAX I and II ***computer*** running VMS will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Alsys, Inc.
1432 Main STreet
Waltham, MA 02154

Offeror's Background:
Founder Jean Ichbiah was the principal designer of the Ada language. Our company wrote the Ada standard. Eight Alsys employees received certificates from the Department of Defense for their contributions to the Ada language. Director of Alsys Ltd., John Barnes is the author of a reknowned text.

Pricing information: $6000 for MicroVAX I or II $9800 for VAX-11/725-785, $15000 for VAX 8600. This CAI course is a ***product*** and is available for the MicroVMS or VAX/VMS Version 3. This course is ***available on*** for MicroVAX diskettes and for VAX. ***Available:*** now. For further information ***contact*** Marketing Department at telephone (617)890-0030. The best time to call is Mon-Fri 9:00-5:30 EST.

Offeror's Comments :
Twenty-seven lessons and product guide available. On a single screen (either color or monochrome), the course presents tutorials and quizzes on Ada topics and supplies the answer if the student is unable to answer the problem correctly. It reinforces concepts taught earlier and provides frequent opportunities to apply Ada principles as soon as they are presented. On-line Guide explains how to do a lesson before student starts the course.

You Know FORTRAN-Ada Is Simple

The ***objective*** is to introduce FORTRAN programmers to Ada, using FORTRAN terms as a starting point.

The course is ***oriented*** toward design concepts, management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include exception handling, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes course developers, program managers, programmers and technical managers. Programming ***background*** required includes FORTRAN. The course ***materials*** include User's Guide, on-screen help, lecture notes and a workbook. The IBM PC ***computer*** running DOS will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Alsys, Inc.
1432 Main Street
Waltham, MA 02154

Offeror's Background:
Company founded by the principal designer of the Ada language. Ada standard written by Alsys. Eight Alsys employees received DoD certificates for their contributions to the Ada language.

Pricing information: $1620 for one course; discounts available on quantity purchases. This CAI course is a ***product*** and is available for the MS-DOS. This course is ***available on*** 5-1/4 diskettes. ***Available:*** now. For further information ***contact*** Marketing Department at telephone (617)890-0030. The best time to call is Mon-Fri 9:00-5:30.

Offeror's Comments :
Course contains 10 lessons. Most lessons begin by posing a programming problem, showing the solution in FORTRAN, and then explaining how to convert the FORTRAN program into its Ada equivalent. Finally, the lesson shows how facilities available only in Ada can improve the program. Ample opportunity for problem solving; answers provided when the student is unable to do an exercise correctly.

Lessons on Ada-Volume I

The ***objective*** is to introduce fundamental Ada programming concepts, provide hands-on programming practice.

The course is ***oriented*** toward design concepts, management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include I/O basics, overloading, visibility, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes course developers, program managers and programmers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include User's Guide, a workbook and a study guide. The IBM PC, PC,XT,or AT ***computer*** running DOS will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, full-time students, graduate students and part-time students.

Name and Address of offeror: Alsys, Inc.
1432 Main Street
Waltham, MA 02154
For other Countries see Comments

Offeror's Background:
Founder was the principal designer of the Ada language; parent company, Alsys S.A. of France wrote the Ada standard. Eight Alsys employees earned DoD awards for contributions to the language.

Instructor(s)
Rene' Beretz, Project Leader
Pascale Carayon, Senior Engineer, Teacher
Monique Lavige, Senior Engineer, Specialist in CAI

Pricing information: $2500 for Vol. I; discounts for multiple purchases. This CAI course is a ***product*** and is available for the IBM PC 150K MS-DOS. This course is ***available on*** 5 1/4 " diskettes. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Marketing Department at telephone (617)890-0030. The best time to call is Mon-Fri 9:00-5:30 EST.

Offeror's Comments :
First course in Ada programming designed for those with some experience in other computer languages. Provides a core of Ada concepts using modern techniques of software engineering. A self-paced course with 15 lessons. Twenty minute preview available.

Alsys, Inc.

Lessons on Ada-Volume II

The ***objective*** is to present advanced Ada programming concepts and provide practice in applying them.

The course is ***oriented*** toward design concepts and technical programming. The Ada ***concepts*** covered include separate compilation, select statement, exception handling, generics, tasking and packages. The ***audience*** this course is intended for includes course developers, program managers, programmers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include a user's guide, a workbook and a study guide. The IBM-PC, IBM-PC-XT ***computer*** running PC-DOS will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Alsys, Inc.
1432 Main Street
Waltham, MA 02154

Offeror's Background:
Parent company, Alsys S.A. of France founded by the principal designer of the Ada language. Company wrote the Ada standard. Eight Alsys employees received DoD certificates for their contributions to the Ada language.

Pricing information: $3500 for one Volume II; discounts available for quantity purchases. This CAI course is a ***product*** and is available for the IBM/PC/PC-DOS. This course is ***available on*** 5 1/4" diskettes. This course is part 2 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Marketing Department at telephone (617)890-0030. The best time to call is Mon-Fri 9:00-5:30 EST.

Offeror's Comments :
Lessons on Ada, Volume I is a prerequisite for this course, which teaches advanced programming in Ada. Twenty minute preview tape is available. Self-paced CAI-12 lessons.

TeleSoft - Ada Learning KIT

The ***objective*** is to allow the user to explore the full Ada language, checking his understanding of Ada and incrementally building a program within a structured setting.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include overloading visibility and private types, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include a study guide. The VAX ***computer*** running VMS, UNIX and the TeleSoft Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: CAP Industry, Ltd.
Trafalgar House
Richfield Avenue
READING RG1 8QA, ENGLAND

Offeror's Background:
The CAP Group is one of Europe's leading systems companies with wide experience in scientific, industrial, commercial and real-time systems. CAP is leading the field in the practical application of Ada in the UK.

Pricing information is available on request. This CAI course is a ***product*** and is available for the VAX. This course is ***available on*** standard magnetic tape. ***Available:*** now. For further information ***contact*** Peter Hanson at telephone 0734 55900. The best time to call is office hours.

Offeror's Comments :
CAP has been distributing and developing TeleSoft's Ada products since 1981.

Introduction to Ada: Computer Based Training

The ***objective*** is to teach how to recognize major Ada features, identify Ada programming rules and recognize correctly-written Ada programs.

The course is ***oriented*** toward technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing and packages. Programming ***background*** required includes experience in any high order language. The course ***materials*** include magnetic tape/mini-diskette and a study guide. The DG Systems;IBM PC ***computer*** running AOS/VS;MS- will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Data General Corp.
4400 Computer Drive
Westboro, MA 01581-9973
Attn: Educational Services

Offeror's Background:
Data General's Educational Service Department provides complete hands-on training on Data General products, including Ada. D.G. currently offers two Ada seminars and computer-aided instruction in Ada.

Pricing information: available upon request. This CAI course is a ***product*** and is available for the DG-Eclipse MV/Family-AOS/VS, DG-Data General/One-MS-DOS and IBM-PC-MS-DOS. This course is ***available on*** 3 1/2" or 5 1/4" diskettes and standard magnetic tape. ***Available:*** now. For further information ***contact*** Data General at telephone (617)366-2900. The best time to call is 9 a.m. - 5 p.m. EST.

TeleQuiz CAI Software

The ***objective*** is to provide Ada programming experience.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include exception handling, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, analysts, programmers, technical managers and engineers. No programming ***background*** is required. The Delphi-100 ***computer*** running UNIX and the TeleSoft ***compiler*** will be used. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Digicomp Research
Terrace Hill
Ithaca, NY 14850

Offeror's Background:
Digicomp is involved in the Ada language through commercial products and government contracts involving programming and study of the language and its impact on other military standards. Digicomp markets the TeleSoft Ada compiler under UNIX on the Delphi-100 Micro computer.

Pricing information is available on request. This CAI course is a ***product*** and is available for the UNIX-Digicomp, DELPHI-100 and microcomputer. This course is ***available on*** floppy disk. For further information ***contact*** Graham Hall at telephone 800-457-6000. The best time to call is afternoon, EST.

Ada in Software Design

The ***objective*** is to teach Ada Software design of real-time embedded systems, through all development phases, using a comprehensive case study approach.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include ADL, graphic design, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is real-time embedded systems. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include a study guide. The VAX,GOULD, IBM XT/AT ***computer*** running AIS-II* will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: McDonnell Douglas Astronautics Co.
AIS-II Program Development
1390 S. Potomac St., Suite 124C
Aurora, CO 80012

Offeror's Background:
This course has been developed and used to train McDonnell Douglas Personnel. The Computer Based Training Systems Group has extensive experience in the development of Ada software, and over 10 years experience in developing computer based technical training.

Pricing information is available on request. This CAI course is a ***product*** and is available for the VAX 1178 (VMS), GOULD 6080, 6032 (UNIX) and IBM PC/XT, IBM AT (MS-DOS). This course is ***available on*** 5 1/4" DS/DD diskettes and magnetic tape. ***Available:*** SEP 86. For further information ***contact*** Jack Rosenow at telephone (303)337-6303. The best time to call is 8:00 am - 5:00 pm (MST).

Offeror's Comments :
* AIS-II is a registered trademark of McDonnell Douglas Corporation.

Introduction to Software Development

The ***objective*** is to present an overview of the software development process, focusing on the use of Ada and DoD STD 2167.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include real-time programming, strong data typing and packages. The ***application area*** emphasized is software lifecycle processes. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include a study guide. The VAX, Gould, IBM XT/A ***computer*** running AIS-II * will be used. The type of ***organization*** offering the course is a company.

Name and Address of offeror: McDonnell Douglas Astronautics Co.
AIS-II Program Development
1390 S. Potomac St., Suite 124C
Aurora, CO 80012

Offeror's Background:
This course has been developed and used to train McDonnell Douglas Personnel. The Computer Based Training Systems Group has extensive experience in the development of Ada software, and over 10 years experience in developing computer based technical training.

Pricing information: available upon request. This CAI course is a ***product*** and is available for the VAX 1178(VMS), GOULD 6080, 6032 (UNIX), IBM PC/XT, IBM AT (MS-DOS) and Call for other availabilities. This course is ***available on*** 5 1/4" DS/DD diskettes and magnetic tape. ***Available:*** Apr 86. For further information ***contact*** Jack Rosenow at telephone (303)337-6303. The best time to call is 8:00 am - 5:00 pm (MST).

Offeror's Comments :
* AIS-II is a registered trademark of the McDonnell Douglas Corporation.

Ada Management Issues and the DoD Proposal Process

The ***objective*** is to teach Ada management issues focusing on Ada resources for bidding on DoD proposals and managing Ada programs.

The course is ***oriented*** toward management overview, management programming and programming support environments. The ***application area*** emphasized is decision process for Ada managers. The ***audience*** this course is intended for includes program managers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include a study guide. The VAX,GOULD,IBM XT/AT ***computer*** running AIS-II* will be used. The type of ***organization*** offering the course is a company.

Name and Address of offeror: McDonnell Douglas Astronautics Co.
AIS-II Program Development
1390 S. Potomac St., Suite 124C
Aurora, CO 80012

Offeror's Background:
This course has been developed and used to train McDonnell Douglas personnel. The Computer Based Training Systems Group has extensive experience in the development of Ada software, and over ten years experience in developing computer based technical training.

Pricing information is available on request. This CAI course is a ***product*** and is available for the VAX 1178 (VMS), GOULD 6080, 6032 (UNIX) and IBM PC/XT, IBM AT (MS-DOS). This course is ***available on*** 5 1/4" DS/DD diskettes and magnetic tape. ***Available:*** 7/86. For further information ***contact*** Jack Rosenow at telephone (303)337-6303. The best time to call is 8:00 am - 5:00 pm (MST).

Offeror's Comments :
* AIS-II is a registered trademark of the McDonnell Douglas Corporation.

TeleSoft Tele-Quiz System

The ***objective*** is to aid programmers in learning the Ada language through design, implementation and testing on a given problem.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, strong data typing, packages and problem solving. The ***audience*** this course is intended for includes programmers. Programming ***background*** required includes Ada and Pascal. The course ***materials*** include a learning materials kit. The HP 200 ***computer*** running Pascal 2.1 and the TeleSoft Ada 1.3 ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: SOLUTIONS PLUS, INC.
1425 Riverside
Fort Collins, CO 80524

Offeror's Background:
Involved in porting TeleSoft Ada to HP 200 computers and moving toward validation of product.

Pricing information is available on request. This CAI course is a ***product*** and is available for the HP 200 Pascal 2.1. This course is ***available on*** 5 1/4" diskettes. For further information ***contact*** Gerri Hockett at telephone 303-226-3880.

Offeror's Comments :
Will soon be available on HP/UNIX

The CATalyst Ada Reference/Tutorial System

The ***objective*** is to provide an education and programming tool with the full Ada Reference Manual text and parallel explanations, examples, and simulations.

The course is ***oriented*** toward management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include all Ada concepts, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is software engineering goals. The ***audience*** this course is intended for includes any ARM user, program managers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include a User's Guide. The IBM PC, XT, AT ***computer*** running DOS 2.X+ will be used. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Tachyon Corporation
2725 Congress Street
Suite 2H
San Diego, CA 92110

Offeror's Background:
Tachyon Corporation specializes in Ada software quality assurance, computer hosted instruction and information retrieval systems, authoring tools, and a variety of advanced programming tools.

Pricing information: complete system is $996; Ada Reference Manual itself is $399. Multiple copy discounts and site licenses are available. This CAI course is a ***product*** and is available for the IBM PC/AT and compatibles and under MS-DOS 2.X+. This course is ***available on*** 5 1/4" floppy diskettes and can be installed on fixed disks. ***Available:*** 01/86. For further information ***contact*** Don Middleton at telephone (619)574-1666. The best time to call is business hours.

Offeror's Comments :
This is a self-paced, configurable system designed to make full use of the computer's instructional and reference capabilities. It can be run memory resident for use with compilers, editors, etc. It is extremely fast, easy to use (on-line help) and can look up or search for terms.

2.2. Lecture/Seminar Courses

2.2.1. Company Offerings

Course listings start on the next page.

Ada Training Courses

The type of ***organization*** offering the course is a company.

Name and Address of offeror: A-OK Computers
816 Easley Street
Suite 615
Silver Spring, MD 20910

Pricing information: available upon request. For further information ***contact*** Jesse Bunch at telephone (301)585-5105.

Offeror's Comments :
A three-day intensive Ada Training course will be offered in early 1985 from A-OK Computers. The course will be offered in several major cities and at corporate and government sites. It will be taught by RR Software, the makers of JANUS/Ada. Every person attending the course will use and receive a complete JANUS/Ada Development Package at no additional cost.

An Introduction to Ada-Based PDLs

The ***objective*** is to acquaint managers, designers and programmers with the concept of PDLs in particular Ada-Based PDLs.

The course is ***oriented*** toward design concepts, management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include generics, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Ada Educational Packages, Inc.
76 Yantacaw Brook Road
Upper Montclair, NJ 07043

Offeror's Background:
Corporate staff members have been giving and developing Ada courses and Ada related courses for over four years. The staff have also taught most of the courses in the US Army's Ada Training Curriculum.

Instructor(s)
Dr. Philip Caverly, Dir. of the Ada Technology Center
Dr. Phil Goldstein, Professor of C.S.

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. The course is taught at various locations. The ***length*** of course is 3 days. ***Available:*** 2/86. For further information ***contact*** Dr. Philip W. Caverly at telephone (201)783-4926.

Offeror's Comments :
It is recommended that this course precede hands-on courses that we will be offering in the use of specific PDLs. Dr. Caverly is the Chairman of the Computer Science Dept. at Jersey City State College. The instructors have been involved with Ada since 1982, and have trained over 1,000 government and industrial scientists in the past year.

Programming with Ada (3 day)

The ***objective*** is to convey sufficient understanding of the Ada language to permit reading of and programming with the aid of the Language Reference Manual.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include lecture notes. The customer's ***computer*** and the customer's ***compiler*** will be used. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Daniel M. Berry and Orna Berry
Computer Scientists
9328 Kramerwood Place
Los Angeles, CA 90034

Offeror's Background:
Professor of Computer Sciences, Teaching, Research, and Consulting in Software Engineering and Programming Languages, Reviewer during Ada design. Ada user and teacher.

Instructor(s)
Daniel M. Berry, Ph.D., Professor of Computer Science
Orna Berry, M.Sc.

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 3 days. ***Available:*** now. For further information ***contact*** Daniel M. Berry at telephone (213)825-2971. The best time to call is 9:00-5:00 PST.

Offeror's Comments :
I emphasize understanding, what is in the language, why and software engineering.

Programming with Ada (5 day)

The ***objective*** is to convey sufficient understanding of the Ada language to permit reading and programming with the Reference Manual and a modern programming methodology.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include programming assignments and lecture notes. The customer's ***computer*** and the customer's ***compiler*** will be used. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Daniel M. Berry and Orna Berry
Computer Scientists
9328 Kramerwood Place
Los Angeles, CA 90034

Offeror's Background:
Professor of Computer Science, Teaching, Research & Consulting in Software Engineering & Programming Languages, Reviewer during design of the Ada language. Ada user and teacher

Instructor(s)
Daniel M. Berry, Ph.D., Professor of Computer Science
Orna Berry, M.Sc.

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Daniel M. Berry at telephone (213)825-2971. The best time to call is 9:00-5:00 PST.

Offeror's Comments :
I emphasize understanding what is in the language and why, software engineering, and program design.

Advanced Software Engineering with Ada

The ***objective*** is to teach the use of object-oriented design and process ideas to build more verifiable, maintainable, & portable s/w.

The course is ***oriented*** toward software engineering methodologies, design concepts, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is interactive and real-time applications. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The customer's system ***computer*** and the customer's ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: George W. Cherry
P.O. Box 2429
Reston, VA 22090

Offeror's Background:
Instructor has a rich background in designing and implementing real-time systems. He has published a book on parallel programming in the Ada language, and conducted over one-hundred seminars on Ada software engineering. He is developing a PAMELA software engineering tool.

Instructor(s)
George W. Cherry, BS, MS, PhD(ABD)

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** George W. Cherry, Thought**Tools at telephone (703)437-4450.

George W. Cherry

Process Abstraction Method for Embedded Large Applications

The ***objective*** is to teach the PAMELA method for developing software for large real-time applications.

The course is ***oriented*** toward software engineering methodologies, design concepts, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include abstract processes, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is large real-time applications. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes and a workbook. The customer's ***computer*** and the customer's ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: George W. Cherry
P.O. Box 2429
Reston, VA 22090

Offeror's Background:
Instructor has a rich background in designing and implementing real-time systems. He has published a book on parallel programming in the Ada language, and conducted over one hundred seminars on Ada software engineering. He is developing a PAMELA software engineering tool.

Instructor(s)
George W. Cherry, BS, MS, PhD(ABD)

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** George W. Cherry, Thought**Tools at telephone (703)437-4450.

George W. Cherry

Software Concepts in Ada

The ***objective*** is to emphasize the relationship of Ada language features to software engineering design principles. The course is tailored to meet the students' needs.

The course is ***oriented*** toward design concepts, technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Compuition
3312 Orange Street
Los Alamos, NM 87544
Attn: Susan S. Johnson

Offeror's Background:
Offeror has had the lead role in introducing Ada at Los Alamos National Laboratory, and is now conducting Ada seminars at Sandia National Laboratories. Twenty years experience in teaching university and short courses; fifteen years of practical software experience. Taught a one-semester course in Ada and software engineering at University of New Mexico. Has used Ada/ED, TeleSoft, ALS & Verdix.

Instructor(s)
Susan Johnson, MS C.S., MA M.A.

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 3 days. ***Available:*** now. For further information ***contact*** Susan S. Johnson at telephone (505)662-7014. The best time to call is M-W days, eves.

Offeror's Comments :
Course content, level, and duration are tailored for the intended audience. Emphasis may be on software design or on Ada programming using principles of good design. Hands-on exercises may be included using the customer's compiler, if desired.

Orientation to Ada for Real-time Programmers

The ***objective*** is to learn to read an Ada program, to understand how this language is unique and to write an Ada-like program.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Programming in Ada by Barnes, as well as overhead transparencies & a problem set. The VAX ***computer*** running VMS and the NYU Ada-Ed & VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Computer Sciences Corporation
304 W. Route 38
Moorestown, NJ 08057

Offeror's Background:
Major defense system software developer, pioneered use of implementation of Jovial & CMS-2 and has been associated with Ada program since its inception.

Instructor(s)
Ruth Rudolph, Training Coordinator

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. The course is taught at various locations. ***Available:*** Now. For further information ***contact*** Ruth Rudolph at telephone (609)234-1100. The best time to call is 8:00-5:00 weekdays.

Offeror's Comments :
This course is designed to help make participants think in the Ada language. Hands-on may accompany the course or be offered subsequently. It has been well-received and the quality of the Ada programs in the hands-on section have been very good. The textbook is optional.

Ada for Project Managers

The ***objective*** is to introduce the Ada language to project managers who will be responsible for applications requiring the use of Ada in their design or implementation.

The course is ***oriented*** toward design concepts and management overview. The Ada ***concepts*** covered include generics, strong data typing, tasking, packages and abstract data types. The ***application area*** emphasized is program management. The ***audience*** this course is intended for includes program managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include overhead transparencies and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Computer Sciences Corporation
304 W. Route 38
Moorestown, NJ 08057

Offeror's Background:
Major defense system software developer, pioneered use of implementation of Jovial & CMS-2 and has been associated with Ada program since its inception.

Instructor(s)
Anthony Gargaro, Chairperson, SIGAda;Member of KITIA

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site and customer's site. ***Available:*** now. For further information ***contact*** Ruth Rudolph at telephone (609)234-1100. The best time to call is 8-5 Weekdays.

Ada: An Overview for Management

The ***objective*** is to introduce the motivation for and uniqueness of the Ada language to people who must understand what the language hopes to accomplish.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview and programming support environments. The Ada ***concepts*** covered include strong data typing, packages and abstract data types. The ***audience*** this course is intended for includes anyone needing in-depth first exposure, novices, program managers and technical managers. No programming ***background*** is required. The course ***materials*** include miscellaneous articles to be read before and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Computer Sciences Corporation
304 W. Route 38
Moorestown NJ 08057

Offeror's Background:
Major defense system software developer, pioneered use of implementation of Jovial & CMS-2 and has been associated with Ada program since its inception.

Instructor(s)
Ruth Rudolph, Training Coordinator

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at various locations. The ***length*** of course is 1 day. ***Available:*** now. For further information ***contact*** Ruth Rudolph at telephone (609)234-1100. The best time to call is 8:00-5:00 weekdays.

Offeror's Comments :
This course has proved highly successful in getting below the surface in a short time to demonstrate to viewers what the language is really about.

Overview of Ada

The ***objective*** is to give an overview of the rationale, history, technical contents and applications of the Ada language.

The course is ***oriented*** toward management overview and technical overview. The Ada ***concepts*** covered include history and environment, real-time programming, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes program managers and technical managers. Programming ***background*** required includes FORTRAN, PL/1, ALGOL, Jovial and Pascal. The course ***materials*** include lecture notes. The D.G. MV4000 ***computer*** running AOS/VS and the ROLM/DG ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: CR2A
19 Avenue Dubonnet
92411 Courbevoie-cedex
France

Offeror's Background:
The company has specialized for more than 10 years in software engineering, participates in many French Defense and Telecommunication projects and has been involved in Ada developments since 1980. Some relevant areas of activity within the company are: software engineering methodology, basic software design, and real-time applications.

Instructor(s)
several instructors, MS Computer Science, 2yrs Ada experience

Pricing information is available on request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Patrick de Bondeli at telephone (33)147689797. The best time to call is 13:00 to 17:00 GMT.

Offeror's Comments :
Only one of the high-order languages is required; Pascal is preferred.

Concurrent Software Development Using Ada

The ***objective*** is to teach Ada tasking and its use to design and validate concurrent software. PETRI Nets and Predicate-Transition Nets are presented and used.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include use of PETRI Nets, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is multi-task and real-time applications. The ***audience*** this course is intended for includes technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include a medium sized example, exercises and lecture notes. The D-G MV/4000 ***computer*** running AOS/VS and the ROLM/DG ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: CR2A
19 Avenue Dubonnet
92411 Courbevoie-Cedex
France

Offeror's Background:
The company has specialized for more than 10 years in software engineering, participates in many French Defense and Telecommunication projects and has been involved in Ada developments since 1980. Some relevant areas of activity within the company are: software engineering methodology, basic software developments, real time applications.

Instructor(s)
Patrick de Bondeli, Ph.D Computer Science, Active on Ada
plus another instructor, Ph.D Computer Science, Active on Ada

Pricing information is available on request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 4 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Patrick de Bondeli at telephone (33)147689797. The best time to call is 13:00 to 17:00 GMT.

Offeror's Comments :
1. For sites external to CR2A facilities, customers must provide an Ada environment with a validated compiler. 2. The length of the course (2-5 days) is fitted to the topics presented (a review of general properties of concurrent programs is optional) and the amount of hands-on training as the customer requests.

Programming in Ada

The ***objective*** is to teach the use of the Ada language with no emphasis on specification and design problems and without using tasking.

The course is ***oriented*** toward technical programming and programming support environments. The Ada ***concepts*** covered include exception handling, generics, strong data typing, packages and problem solving. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes FORTRAN, PL/1, ALGOL, Jovial and Pascal. The course ***materials*** include numerous exercises and lecture notes. The D-G MV4000 ***computer*** running AOS/VS and the ROLM/DG ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: CR2A
19 Avenue Dubonnet
92411 Courbevoie-Cedex
France

Offeror's Background:
The company has specialized for more than 10 years in software engineering, participates in many French Defense and Telecommunication projects and has been involved in Ada developments since 1980. Some relevant areas of activity within the company are: software engineering methodology, basic software development, real-time applications

Instructor(s)
Several instructors., MS Computer Science, 2yrs Ada experience

Pricing information is available on request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 3 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Patrick de Bondeli at telephone (33)147689797. The best time to call is 13:00 to 17:00 GMT.

Offeror's Comments :
For sites external to CR2A facilities, customers must provide an Ada environment with a validated Ada compiler. The length of the course (3-5 days) is fitted to the amount of hands-on training which is requested by the customer. Of the languages listed in "Programming Background", Pascal is preferred.

Software Engineering Using Ada

The ***objective*** is to teach modern software engineering methodology using Ada language. Detailed design & validation of concurrent programs is covered later in the series.

The course is ***oriented*** toward software engineering methodologies, design concepts and programming support environments. The Ada ***concepts*** covered include exception handling, generics, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include basic papers on s/w eng methodology and lecture notes. The DG MV4000 ***computer*** running AOS/VS and the ROLM/DG ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: CR2A
19 Avenue Dubonnet
92411 Courbevoie Cedex, FRANCE

Offeror's Background:
The company has specialized for more than 10 years in software engineering, participates in many French Defense and Telecommunication projects and has been involved in Ada development since 1980. Some relevant areas of activity within the company are: software engineering methodology, basic software developments, and real time applications.

Instructor(s)
Several instructors, MS Computer Science,2 yrs. Ada exper.

Pricing information is available on request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 3 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Patrick de Bondeli at telephone (33)147689797. The best time to call is 13:00 to 17:00 GMT.

Offeror's Comments :
1. For sites external to CR2A facilities, customers must provide an Ada environment with a validated Ada compiler. 2. The length of the course (2-5 days) is fitted to the amount of hands-on training which is requested by the customer.

Introduction to Ada Concepts & Programming

The ***objective*** is to provide hands-on introduction to Ada programming.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes software engineers, analysts, program managers and programmers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include lecture notes and a study guide. The DG Eclipse MV/Family ***computer*** running AOS/VS and the DG Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a government agency. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Data General Corporation
4400 Computer Drive
Westboro, MA 01580
Attn: Educational Services

Offeror's Background:
Data General's Educational Services Department provides complete hands- on training on Data General products, including Ada. DG currently offers two Ada seminars and computer-aided instruction in Ada.

Instructor(s)
Galen Bunnel, Sr. Instructor with Educational Svcs.

Pricing information: available upon request (customer's site); $1200 (effective through 9/26/86). This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 5 days. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Data General - Central Registration at telephone (617)366-2900. The best time to call is 9:00am-5:00pm EST.

Offeror's Comments :
This course is part of a two-course series. It is designed to be followed by the course "Advanced Ada Program Design and ADE Topics."

Advanced Ada Program Design and ADE Topics

The ***objective*** is to teach programmers to use advanced Ada features. Also introduces Data General's Ada Development Environment (ADE).

The course is ***oriented*** toward design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, generics and tasking. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes and a study guide. The DG Eclipse MV/Family ***computer*** running AOS/VS and the DG Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Data General Corporation
4400 Computer Drive
Westboro, MA 01580
ATTN: Educational Services

Offeror's Background:
Data General's Educational Services Department provides complete hands-on training on Data General products, including Ada. DG currently offers two Ada seminars and computer-aided instruction in Ada.

Instructor(s)
Galen Bunnell, Sr. Instructor with Educational Services

Pricing information: $1200; available upon request (for customer's site). This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. This course is part 2 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Data General - Registration at telephone (617)366-2900. The best time to call is 9:am-5:00pm EST.

Offeror's Comments :
Mr. Bunnel has extensive teaching experience in AOS, AOS/VS, Systems Programming, Assembly Language and the Ada language.

Data General Corporation

Utilizing VMS Features from VAX Ada

The ***objective*** is to teach how to take advantage of VAX/VMS features from Ada through the appropriate usage of Digital supplied packages.

The course is ***oriented*** toward technical programming and programming support environments. The Ada ***concepts*** covered include interface w/operating system & utilities, real-time programming, exception handling, generics, tasking, packages and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include runtime reference, i/o guide, lecture notes and a workbook. The VAX ***computer*** running VAX/VMS and the VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Digital Equipment Corporation
Educational Serivces
8100 Corporate Drive
Landover, MD 20785

Offeror's Background:
VAX Ada Compiler has been validated and conforms fully to ANSI standards. Development of compiler began over four years ago. Emphasis placed on comprehensive and informative diagnostic messages as a debugging aid.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 5 days. ***Available:*** 1/86. For further information ***contact*** Ann "Dee" DeCristofaro at telephone (301)577-4300. The best time to call is 8:30-5:00pm.

VAX-11 Ada Training

The ***objective*** is to teach the student how to program in the VAX-11 Ada language, including a careful study of the syntax, format, and structure.

The course is ***oriented*** toward technical programming and programming support environments. The Ada ***concepts*** covered include interface to other languages, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as Labs/Solutions/Language Reference Manual and lecture notes. The VAX ***computer*** running VMS and the VAX Ada (DEC) ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, graduate students and general public.

Name and Address of offeror: Digital Equipment Corporation
Educational Services
8100 Corporate Drive
Landover, MD 20785

Offeror's Background:
VAX Ada Compiler has been validated and conforms fully to ANSI standards. Development of compiler began over 3 years ago. Emphasis placed on comprehensive and informative diagnostic messages as a debugging aid.

Instructor(s)
Ann "Dee" DeCristofaro, Sr. Educ. Specilaist; M.S. in Math.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Shangying Hsiung at telephone (301)577-4300. The best time to call is 8:30am-5:00pm.

Ada Training

The ***objective*** is to teach students how to program in Ada language, taking into account the unique design features of the Ada language.

The course is ***oriented*** toward technical programming and programming support environments. The Ada ***concepts*** covered include inforamtion hiding, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Grady Booch (this textbook is not provided), as well as Reference Manuals, lecture notes and a workbook. The VAX ***computer*** running VMS and the VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Digital Equipment Corporation
Educational Services
8100 Corporate Drive
Landover, MD 20785

Offeror's Background:
VAX Ada compiler has been validated and conforms fully to ANSI standards. Development of compiler began over 4 years ago. Emphasis is placed on comprehensive and informative diagnostic messages as a debugging aid.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Ann Dee DeCristofaro at telephone (301)577-4300. The best time to call is 8:30-5.

The Ada Language (Le Langage Ada)

The ***objective*** is to learn the basic characteristics of the Ada language.

The course is ***oriented*** toward technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Pascal. The VAX ***computer*** running VMS and the VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: E.N.S. Telecommunications Service de la
Formation Continue
46 rue Barrault
75634 PARIS CEDEX 13 FRANCE

Pricing information is available on request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 5 days. ***Available:*** 2/86. For further information ***contact*** J.P. Rosen at telephone 1-45817744.

E.N.S. Telecommunications Service de la

Introduction to Ada

The ***objective*** is to introduce attendees to motivation, politics, history, gross characteristics, etc. of Ada.

The course is ***oriented*** toward software engineering methodologies, management overview and technical overview. The Ada ***concepts*** covered include exception handling, strong data typing, tasking and packages. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: EVB Consulting, Inc.
451 Hungerford Drive #701
Rockville, MD 20850

Offeror's Background:
Has developed and taught over 5 Ada related courses (several including hands-on). Acts as Ada education consultant.

Instructor(s)
Edward V. Berard, President, EVB Consulting, Inc.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. The ***length*** of course is 1 day. This course is part 1 in a ***series*** of 5. ***Available:*** now. For further information ***contact*** Ralph Crafts at telephone (301)695-6960. The best time to call is 9:00am-5:00pm EST.

Offeror's Comments :
This is the first course in a series. It should be taken before any of the others.

Introduction to Ada

The ***objective*** is to introduce rationale behind Ada's creation, how Ada will change the way we design software, how Ada will impact the software life cycle.

The course is ***oriented*** toward software engineering methodologies, design concepts and management overview. The Ada ***concepts*** covered include object oriented design and exception handling. The ***audience*** this course is intended for includes all Ada interested parties, novices, analysts, program managers, programmers and technical managers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: EVB Consulting, Inc.
451 Hungerford Drive. Suite 701
Rockville, MD 20850

Instructor(s)
EVB Consulting, Inc.-Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Ralph Crafts at telephone (301)695-6960. The best time to call is 9:00-5:00.

Management Overview of Ada

The ***objective*** is to emphasize the management implications of Ada technology.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview and technical overview. The Ada ***concepts*** covered include exception handling. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: EVB Consulting, Inc.
451 Hungerford Drive, Suite 701
Rockville, MD 20850

Instructor(s)
Staff - EVB

Pricing information is available on request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 2 days. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Ralph Crafts at telephone (301)695-6960. The best time to call is 9:00-5:00.

Analysis and Design for Ada Software

The ***objective*** is introduce analysis and design techniques for real-time, embedded systems.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include real-time programming, exception handling, tasking and packages. The ***application area*** emphasized is real-time. The ***audience*** this course is intended for includes analysts, programmers and technical managers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: EVB Consulting, Inc.
451 Hungerford Drive #701
Rockville, Md. 20850

Offeror's Background:
Has developed and taught over 5 Ada related courses (several including hands-on). Acts as Ada education consultant.

Instructor(s)
Edward V. Berard, President, EVB Consulting
Christine Youngblut, Software Consultant

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. This course is part 2 in a ***series*** of 5. ***Available:*** now. For further information ***contact*** Ralph Crafts at telephone (301)695-6960. The best time to call is 9:00am-5:00pm EST.

Offeror's Comments :
This is the second course in a series. It should be taken before the Ada programming workshop.

Ada As A Program Design Language

The ***objective*** is to introduce Ada PDL techniques and philosophies.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and technical managers. No programming ***background*** is required. The course ***materials*** include lecture notes. The optional ***computer*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: EVB Consulting, Inc.
451 Hungerford Drive, #701
Rockville, MD 20850

Offeror's Background:
Has developed and taught over 5 Ada related courses (several including hands-on). Acts as Ada education consultant.

Instructor(s)
Edward V. Berard, President, EVB Consulting, Inc.
Christine Youngblut, Software Consultant

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. The course is taught at offering organization's site and customer's site. The ***length*** of course is 3 days. This course is part 3 in a ***series*** of 5. ***Available:*** now. For further information ***contact*** Ralph Crafts at telephone (301)695-6960. The best time to call is 9:00am-5:00pm EST.

Offeror's Comments :
This course is the third in a series. It is an optional course.

Ada Programming Workshop

The ***objective*** is to provide a hands-on introduction to Ada programming.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers and technical managers. The course ***materials*** include lecture notes. The Intellimac ***computer*** running ROS & UNIX and the Telesoft-Ada, ICSC-Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: EVB Consulting, Inc.
451 Hungerford Drive #701
Rockville, MD 20850

Offeror's Background:
Has developed and taught over 5 Ada related courses (several including hands-on). Acts as Ada education consultant.

Instructor(s)
Edward V. Berard, President, EVB Consulting, Inc.
Richard Yeadon, Software Consultant

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 5 days. This course is part 4 in a ***series*** of 5. ***Available:*** now. For further information ***contact*** Ralph Crafts at telephone (301)695-6960. The best time to call is 9:00am-5:00pm EST.

Offeror's Comments :
This course is the fourth course in a series. Participants should have taken at least the "Introduction to Ada".

EVB Consulting, Inc.

Advanced Ada Programming Workshop

The ***objective*** is to provide a study of advanced features of Ada, e.g., tasking, generics, rep. specs.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers and technical managers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The Intellimac ***computer*** running ROS & UNIX and the TeleSoft-Ada, ICSC-Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: EVB Consulting, Inc.
451 Hungerford Drive, #701
Rockville, MD 20850

Offeror's Background:
Has developed and taught over 5 Ada related courses (several including hands-on). Acts as Ada education consultant.

Instructor(s)
Edward V. Berard, President, EVB Consulting

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. This course is part 5 in a ***series*** of 5. ***Available:*** now. For further information ***contact*** Ralph Crafts at telephone (301)695-6960. The best time to call is 9:00am-5:00pm EST.

Offeror's Comments :
This is the fifth course in a series. A working knowledge of Ada is a prerequisite.

Ada Programming and Design

The ***objective*** is to develop an understanding of a strongly typed language and to obtain practical experience in package design and tasking.

The course is ***oriented*** toward software engineering methodologies, design concepts, management programming and technical programming. The Ada ***concepts*** covered include file handling, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include the text Ada Programming with Applications by E. Vasilescu. The VAX-780 ***computer*** running VMS and the VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: GNV Associates
Attn: E. Vasilescu
35 Chestnut Street
Malverne, NY 11565

Offeror's Background:
The founder of the organization, E. Vasilescu, has taught Ada since 1982, and has authored the book, "Ada Programming with Applications".

Instructor(s)
E. Vasilescu, Ph.D, Assoc. Prof.

Pricing information: available upon request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at customer's site and various locations. The ***length*** of course is 8 days. ***Available:*** 3/86. For further information ***contact*** E. Vasilescu at telephone (516)599-0108.

Ada Programming Language - Package 1

The ***objective*** is to provide a top-down & bottom-up approach to the Ada language along with the necessary skills to write & execute basic Ada programs.

The course is ***oriented*** toward software engineering methodologies, technical overview and technical programming. The Ada ***concepts*** covered include lexical elements, simple I/O, strong data typing and abstract data types. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language such as: FORTRAN. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as Ada Language Reference Manual and a workbook. The Gould Concept/32 ***computer*** running UTX and the ICC Ada Translator/Telesoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Gould Computer Systems Division
Training Department
5100 N. State Rd 7
Fort Lauderdale, FL 33319

Offeror's Background:
Gould CSD operates a 45 instructor training department designing and delivering student based objective training.

Pricing information: $880.00. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. This course is part 1 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Training Registrar at telephone (305)797-5999. The best time to call is 8:00am-5:00pm EST.

Offeror's Comments :
Ada Programming Language Training Courses are 50% laboratory based.

Ada Programming Language - Package 2

The ***objective*** is to extend the concepts discussed in the prerequisite course and provide the additional skills necessary to develop and execute modularized systems.

The course is ***oriented*** toward software engineering methodologies, technical overview and technical programming. The Ada ***concepts*** covered include subprograms, overloading, exception handling, generics and packages. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language such as: FORTRAN. The Gould Concept/32 ***computer*** running UTX and the ICC Ada Translator/Telesoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Gould Computer Systems Division
Training Department
5100 N. State Rd 7
Fort Lauderdale, FL 33319

Offeror's Background:
Gould CSD operates a 45 instructor training department designing and delivering student based objective training.

Instructor(s)
Mervyn Weis
Nancy Pease

Pricing information: $880.00 This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. This course is part 2 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Training Registrar at telephone (305)797-5999. The best time to call is 8:00am-5:00pm EST.

Offeror's Comments :
Ada Programming Language Training Courses are 50% laboratory based.

Ada Programming Language - Package 3

The ***objective*** is to present the skills necessary to develop and execute advanced applications systems in the Ada language.

The course is ***oriented*** toward software engineering methodologies, technical overview and technical programming. The Ada ***concepts*** covered include discriminated/variant records, real-time programming and tasking. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language such as: FORTRAN. The Gould Concept/32 ***computer*** running UTX and the ICC Ada Translator, Telesoft ***compiler*** will be used. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Gould Computer Systems Division
Training Programs
5100 N. State Rd 7
Fort Lauderdale, FL 33319

Offeror's Background:
Gould CSD operates a 45 instructor Training Department designing and delivering student based objective training.

Pricing information: $880.00. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. This course is part 3 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Training Registrar at telephone 305-797-5999. The best time to call is 8:00am-5:00pm EST.

Offeror's Comments :
Ada Programming Language Training Courses are 50% laboratory based.

Gould Product Workshop

The type of ***organization*** offering the course is a company.

Name and Address of offeror: Gould, Inc.
Computer Systems Div., R. Thibodeau
6901 W. Sunrise Blvd.
Ft. Lauderdale, FL 33310

Pricing information: FREE of charge ($1.00 contribution-lunch-for DoD personnel as required). For further information ***contact*** Robert R. Thibodeau at telephone (305)797-5773.

Offeror's Comments :
Product Workshop Module Outline: One day workshop. UTX - The UNIX* Operating System - System V & BSD 4.2 - Ada: The language Production Quality Compilers, Validation, Training. CBT Computer Based Training -- Product written in Ada language (500,000+ lines of Ada code) Lunch - Hands-On Demonstrations Workshops scheduled for 21 domestic and 6 international sites in 1986. Workbooks & other literature available (no charge).

Software Engineering with Ada

The ***objective*** is to cover topics including the Ada language as used in system/program design, software engineering techniques, tasking and exception mechanisms.

The course is ***oriented*** toward software engineering methodologies and design concepts. The ***application area*** emphasized is real time embedded systems. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: Grumman Aerospace Corporation
Attn.: Angel Aria
Mail Station D01-31T
Bethpage, NY 11714

Offeror's Background:
Grumman Aerospace Corporation is a major aerospace firm specializing in the development of military aircraft and systems. We have extensive experience in development and integration of complex embedded systems and have been active in the Ada language since its inception. We are represented on the KAPSE Interface Team, and have participated in the ANSI Standardization Board and on many SIGADA committees.

Instructor(s)
Bernard Abrams, M.S., MIT, Member SIGAda, IEEE

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. The course is taught at offering organization's site. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Angel Aria at telephone 516-575-1664. The best time to call is 0800-1630 EST.

Introduction to Ada

The ***objective*** is to provide an overview of Ada concepts, utilization of language features in system design and implementation.

The course is ***oriented*** toward software engineering methodologies, management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is real-time embedded systems. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language such as: FORTRAN, PL/1, ALGOL, Jovial and Pascal. The course ***materials*** include the text Programming in Ada by J.G.P. Barnes, as well as DOD-STD-1815A and lecture notes. The IBM VM, VAX ***computer*** running CMS, VMS and the TeleSoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: Grumman Aerospace Corporation
Mail Station D01-31T
Bethpage, NY 11714
Attn: Angel Aria

Offeror's Background:
Grumman Aerospace Corporation is a major aerospace firm specializing in the development of military aircraft and systems. We have extensive experience in development and integration of complex embedded systems and have been active in the Ada language since its inception. We are represented on the KAPSE Interface Team, and have participated in the ANSI Standardization Board and many SIGADA committees.

Instructor(s)
Charles S. Mooney, B.S., Iona College, Member SIGADA, IEEE
Bernard Abrams, M.S., MIT, Member SIGADA, IEEE
Gregory Foy, M.S., St. John's, Member SIGADA, IEEE

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. The course is taught at offering organization's site. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Angel Aria at telephone (516)575-1664. The best time to call is 8:00am-4:30pm EST.

Offeror's Comments :
This course is a basic introductory course, portions of which are on videotape. This course has been given almost continuously since 1980. Length of course: 16 hours lecture, 10 hours laboratory.

Grumman Aerospace Corporation

Ada Programming - Advanced Topics

The ***objective*** is to stress advanced topics in Ada language and potential applications of these features.

The course is ***oriented*** toward technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is real-time embedded systems. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The IBM VM ***computer*** running CMS and the NYU Ada Ed and TeleSoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: Grumman Aerospace Corporation
Attn.: Angel Aria
Mail Station D01-31T
Bethpage, NY 11714

Offeror's Background:
Grumman Aerospace Corp. is a major aerospace firm specializing in the development of military aircraft and systems. We have extensive experience in development and integration of complex embedded systems and have been active in the Ada language since its inception. We are represented on the KAPSE Interface Team, and have participated in the ANSI Standardization Board and on many SIGADA committees.

Instructor(s)
Gregory Foy, M.S., St. John's, Member SIGADA, IEEE
Charles Mooney, B.S., Iona, Member SIGADA, IEEE

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Angel Aria at telephone (516)575-1664. The best time to call is 0800-1630 EST.

Ada Language Course

The ***objective*** is to introduce the user to the Ada language. This course is prerequisite to more advanced courses which are under development.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include Ada Based Design Language, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is communication systems. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language such as: FORTRAN, PL/1, assembly and Pascal. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as lecture notes. The VAX-11/785 ***computer*** running VMS 4.2 and the DEC VAX ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: GTE/GSC Communication Systems Division
77 "A" Street
Needham Heights, MA 02194

Offeror's Background:
GTE Systems, Communications Systems Division, has responsibility for management of many military electronics development systems with GTE. GTE CSD participated in the Test and Evaluation Phase of Ada Language Development and the ANSI Ada Canvas, is represented on the IEEE Ada PDL Working Group and is an Institutional Sponsor of ACM AdaTec.

Instructor(s)
Charlene R. Hayden, A.B./Math, MSEE

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at offering organization's site and various locations. The ***length*** of course is 35 hours. ***Available:*** now. For further information ***contact*** Charlene Roberts Hayden at telephone (617)449-2000. The best time to call is 8:00am-4:30pm EST.

Offeror's Comments :
This course has been successfully offered 3 times previously using Barnes' book and stressing software engineering techniques through lecture notes.

Ada for Managers

The ***objective*** is to familiarize managers with the Ada language and the impact of Ada technology.

The course is ***oriented*** toward software engineering methodologies, management overview and programming support environments. The Ada ***concepts*** covered include benefits of using Ada for s/w developmen, real-time programming, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***application area*** emphasized is benefits of using Ada for s/w dev't. The ***audience*** this course is intended for includes program managers and technical managers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: GTE/GSC Communication Systems Division
77 "A" Street
Needham Heights, MA 02194

Offeror's Background:
GTE Government Systems, Communications Systems Division, has responsibility for management of many military electronics development systems. GTE CSD participated in the Test and Evaluation Phase of Ada Language Development and the ANSI Ada Canvas, is represented on the IEEE Ada PDL Working Group and is an Institutional Sponsor of ACM SIGAda.

Instructor(s)
Charlene R. Hayden, A.B. Math

Pricing information is not applicable to this course. This course is ***scheduled*** as customer determines. The course is taught at offering organization's site. The ***length*** of course is 8 hours. ***Available:*** now. For further information ***contact*** Charlene Roberts Hayden at telephone (617)449-2000. The best time to call is 8:00am-4:30pm EST.

Ada Mini Course

The ***objective*** is to provide employees with an overview of the Ada language.

The course is ***oriented*** toward design concepts, management overview and technical overview. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages and abstract data types. Programming ***background*** required includes experience in any high order language such as: FORTRAN, assembly and Pascal. The course ***materials*** include the text Programming in Ada by J.G.P. Barnes, as well as lecture notes. The VAX-11/780 ***computer*** running VMS 4.2 and the DEC VAX ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: GTE/GSC Communication Systems Division
77 "A" Street
Needham Heights, MA 02194

Offeror's Background:
GTE Government Systems, Communications System Division, has responsibility for management of many military electronics development systems. GTE CSD participated in the Test and Evaluation Phase of Ada Language Development and the ANSI Ada Canvas, is represented on the IEEE Ada PDL Working Group and is an Institutional Sponsor of ACM SIGAda.

Instructor(s)
Charlene R. Hayden, A.B./Math, MSEE

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at offering organization's site and various locations. The ***length*** of course is 16 hours. ***Available:*** now. For further information ***contact*** Charlene Roberts Hayden at telephone (617)449-2000. The best time to call is 8:00am-4:30pm.

Offeror's Comments :
Although not formally part of a series, many employees who take this course go on to take the 40 hours Ada Course.

Ada for Experienced Programmers

The ***objective*** is to be able to design and implement Ada-oriented solutions to abstract problem definitions.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include emphasis on package design, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes software researchers, analysts, programmers and engineers. Programming ***background*** required includes 2 HOLs. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as Ada LRM:ANSI/Mil-Std-1815A. The Honeywell DPS6 ***computer*** running GCOS6 and the Honeywell/DDC Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Honeywell Computer Science Center
MN63-C090
1000 Boone Avenue North
Golden Valley, MN 55427

Offeror's Background:
Honeywell Computer Sciences Center provides Research and Technology Transfer in the area of Computer Software to all of Honeywell. CSC has been involved with Ada since before GREEN, participating in both Honeywell-internal and other external activities.

Instructor(s)
Paul Stachour, Ph.D. CS 10yrs design/implementation

Pricing information: available upon request. This course is ***scheduled*** periodically, based on demand. The course is taught at various locations. The ***length*** of course is 15 hours. ***Available:*** now. For further information ***contact*** Murray Cooper at telephone (612)541-6803. The best time to call is 9:00-11:00 Central.

Offeror's Comments :
This course is designed to teach the application of good software engineering principles and practices to meet software engineering goals by learning and then using appropriate features of the Ada language and the Ada Programming Support Environment (APSE). Designing for enhancement and change is stressed. It is normally offered only within Honeywell.

Ada for Managers

The ***objective*** is for managers to know goals, principles, and features of Ada as a state-of-art programming language.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview and programming support environments. The Ada ***concepts*** covered include program libraries, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes management support staff, program managers, programmers and technical managers. The course ***materials*** include the text Ada, A Programmer's Guide with Microcomputer Examples by Stanley, Krantz, Fung & Stachour, as well as Ada LRM, ANSI/Mil-Std-1815A and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Honeywell Computer Science Center
MN63-C090
1000 Boone Avenue North
Golden Valley, MN 55427

Offeror's Background:
Honeywell Computer Sciences Center provides research and technology transfer in the area of computer software to all of Honeywell. CSC has been involved with Ada since before GREEN, participating in both Honeywell-internal and other external activities.

Instructor(s)
Dr. Paul Stachour, 10 yrs of design and implementation

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at various locations. The ***length*** of course is 3 days. ***Available:*** now. For further information ***contact*** Murray Cooper at telephone (612)541-6803. The best time to call is 9-11 Central.

Offeror's Comments :
This course is designed for managers who manage teams of Ada programmers/analysts or who expect to be assigned this capacity, or for staff assistants to such persons. A general knowledge of computer programming principles is desirable for course entry. It is normally offered only within Honeywell.

Introduction to Ada

The ***objective*** is to introduce the Ada language is at the level necessary for developing applications programs.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include exception handling, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is aerospace. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes FORTRAN. The course ***materials*** include the text Ada, An Advanced Introduction by Gehani, as well as lecture notes. The VAX 8600 ***computer*** running VMS and the DEC VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Hughes Aircraft Company
P.O.Box 45066
Los Angeles, CA 90045-0066

Offeror's Background:
Offeror has been engaged in Ada related research since 1979. Defense contracts requiring implementation in the Ada language have been awarded.

Instructor(s)
George O. Petrovay, M.S.C.S. (Loyola Marymount University)

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. The course is taught at offering organization's site. The ***length*** of course is 32 hours. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** George O. Petrovay at telephone (213)616-2620. The best time to call is 8:30am-5:00pm.

Designing Real-Time Systems with Ada

The ***objective*** is to provide a comprehensive methodology for designing real-time systems with Ada.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is real-time systems. The ***audience*** this course is intended for includes software designers, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include the text System Design with Ada by R.J.A. Buhr (this textbook is not provided), as well as design notes and lecture notes. The VAX 8600 ***computer*** running VMS and the DEC Ada (ACS) ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Hughes Aircraft Company
San Diego Software Engineering Lab
10103 Carroll Canyon Road
San Diego, CA 92131

Offeror's Background:
Ken Shumate is a software development project manager at Hughes Aircraft Company. He was previously the Technical Director of the SofTech California Division. He participated in the Red/Green language reviews and the test and evaluation phase of Ada development. He is the author of the AUERBACH Report on Ada and an introductory text, Understanding Ada. He has been teaching Ada seminars since 1981. Dr. Kjell Nielsen is the Senior Scientist of the CCSD.

Instructor(s)
Ken Shumate, M.S. B.S. CCP, CDP
Dr. Kjell Nielsen, Ph.D, M.S, B.S.

Pricing information: available upon request. This course is ***scheduled*** periodically, based on demand. The course is taught at various locations. This course is part of a ***series***. ***Available:*** JUN 86. For further information ***contact*** Ken Shumate at telephone (619)693-4007. The best time to call is 8-5.

Offeror's Comments :
This course is offered in-plant for Hughes Aircraft Company.

Hughes Aircraft Company

Advanced Ada: Tasks

The ***objective*** is to provide detailed knowledge of the Ada tasking model and its use in designing concurrent real-time systems.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is real-time systems. The ***audience*** this course is intended for includes programmers and technical managers. Programming ***background*** required includes Ada. The course ***materials*** include the text Ada: Concurrent Programming by N. Gehani, as well as design notes and lecture notes. The VAX 8600 ***computer*** running VMS and the DEC Ada (ACS) ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Hughes Aricraft Company
San Diego Software Engineering Lab
10103 Carroll Canyon Road
San Diego, CA 92131

Offeror's Background:
Dr. Kjell Nielsen is the Senior Scientist of the Command and Control Software Department. Mr. Shumate is a software project manager at Hughes Aircraft Company.

Instructor(s)
Ken Shumate, M.S., B.S., CCP, CDP
Kjell Nielsen, Ph.D, M.S., B.S.

Pricing information: available upon request. This course is ***scheduled*** periodically, based on demand. The course is taught at various locations. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Ken Shumate at telephone (619)693-4004. The best time to call is 8-5.

Offeror's Comments :
This course is offered in-plant to Hughes Aircraft Company, and as a public course by the University of California, San Diego.

Advanced Ada Programming

The ***objective*** is to provide an in-depth study of advanced Ada features to permit students to develop systems programs in the Ada language.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics and tasking. The ***application area*** emphasized is real-time defense systems. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The VAX 8600 ***computer*** running VMS and the DEC VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Hughes Aircraft Company
P.O. Box 45066
Los Angeles, CA 90045-0066

Offeror's Background:
Offeror has been engaged in Ada related research since 1979. Defense contracts requiring implementation in the Ada language are being pursued.

Instructor(s)
George O. Petrovay, M.S.C.S. (Loyola Marymount University)

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. The course is taught at offering organization's site. The ***length*** of course is 28 hours. This course is part 2 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** George O. Petrovay at telephone (213)616-2620. The best time to call is 8:30am-5:00pm.

Intensive Ada Programming Workshop

The ***objective*** is to enable students to write programs in Ada, to appreciate the power of Ada's tasking and control facilities, and to understand the tradeoffs in using Ada.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes HOL programmers, analysts, program managers, programmers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include overhead projector and large screen and a workbook. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: InfoSci Inc.
Box 7117
Menlo Park, CA 94026

Offeror's Background:
InfoSci Inc., a California corporation organized in 1965, has nearly 20 years of experience in providing consulting and training in computer and data processing topics. InfoSci's usual emphasis is on ways to produce and maintain software which is high in reliability and low in cost, and easily and quickly maintained.

Pricing information: $905 per person at public workshop; $8615 if given "in-house" for up to 22 attenders. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at customer's site. The ***length*** of course is 5 days or 35 hours. ***Available:*** now. For further information ***contact*** R.C. Robinson at telephone (408)730-8760. The best time to call is 8:00-5:00 PST.

Offeror's Comments :
This is a true workshop with extensive critiques on exercises done. The emphasis is on building skill and understanding so that the attenders can actually write good programs in the Ada language.

Ada Technical Perspective and Analysis

The ***objective*** is to provide a comprehensive perspective of the Ada language, its structure and objectives, its features and the Ada Programming Support Environment (APSE).

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is using Ada as a tool for implementing embedded systems. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include lecture notes and a workbook. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Institute for Advanced Technology
6003 Executive Boulevard
Rockville, MD 20852

Offeror's Background:
Offeror of Software Engineering training for 20 years and Ada training for 5 years.

Instructor(s)
Frank Belz, Project Manager,TRW, Ada Support

Pricing information: $9045 plus airfare for a 3-day on-site course. Maximum of 20 attendees. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 3 days. ***Available:*** now. For further information ***contact*** Registrar at telephone 301-468-8424. The best time to call is 9:00am-5:00pm EST.

Institute for Advanced Technology

Real-time Software Design (Course 175)

The ***objective*** is to provide a solid, working knowledge of how to integrate real-time operating system software and system architecture options.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include real-time programming and problem solving. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes Ada, Mod 2, FORTRAN and assembly. The course ***materials*** include state of the art and Reference Manual, lecture notes and a workbook. The COMPAQ Portable ***computer*** running PC DOS 2.1 will be used. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Integrated Computer Systems
5800 Hannum Ave.
P.O. Box 3614
Culver City, CA 90231

Offeror's Background:
Since 1974, Integrated Computer Systems has conducted vendor-independent, state-of-the-art courses for over 50,000 participants from companies like: AT&T, ROLM, Burroughs,DEC, NASA, Bell Labs and IBM. Our courses in advanced technology include: software engineering & management; microprocessors, computer networks, computer graphics, artificial intelligence, signal processing, and other applications of electronics, computers & communications.

Instructor(s)
Integrated Computer Systems
Staff

Pricing information: $1095 includes materials; group discount available. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 4 days. ***Available:*** 2/86. For further information ***contact*** Yolande Amundson, Mgr. Ed. Svcs. at telephone (213)417-8888. The best time to call is 6:00-4:00PST.

Offeror's Comments :
This course emphasizes hands-on exercises in which the participant learns how to: determine the time-critical aspects of an application; apply a real-time operating system (RTOS) Kernal for your application; define and prioritize application-specific tasks; develop a customized multi-tasking executive; write device, interrupt and error-handling routines and integrate & test a real-time system.

How to Manage Software Projects (Course 340)

The ***objective*** is to develop and improve the skills required to successfully plan and manage software development efforts.

The course is ***oriented*** toward software engineering methodologies and design concepts. The course ***materials*** include s/w development procedures manual and lecture notes. The IBM PC/XT ***computer*** running PC DOS 3.1 will be used. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Integrated Computer Systems
P.O. Box 3614
5800 Hannum Ave.
Culver City, CA 90231

Offeror's Background:
Since 1974, Integrated Computer Systems has conducted vendor-independent state-of-the-art courses for over 50,000 participants from companies like: AT&T, Burroughs, DEC, NASA, Bell Labs and IBM. Our courses in advanced technology include: software engineering & management, microprocessors, computer networks, computer graphics, artificial intelligence, signal processing and other applications of electronics, computers & communications.

Instructor(s)
Integrated Computer Systems
Staff

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 4 days. For further information ***contact*** Yolande Amundson, Mgr. Ed. Svcs. at telephone (213)417-8888. The best time to call is 6:00-4:00 PST.

Offeror's Comments :
Through use of "Demo Labs" participants learn how to develop a comprehensive project plan that includes: specifying the deliverables, analyzing requirements; developing work-breakdown structures; generating PERT task networks and GANTT critical path schedules; and estimating manpower, schedule and cost.

Dedicated/Embedded Computer Systems (Course 345)

The ***objective*** is to provide the key tools and techniques required to successfully design, develop, integrate and test dedicated computer systems.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include real-time programming and problem solving. The ***audience*** this course is intended for includes analysts, program managers, programmers and engineers. Programming ***background*** required includes Ada, UNIX, FORTRAN and Jovial. The course ***materials*** include lecture notes. The Sun Microsystems ***computer*** will be used. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Integrated Computer Systems
P.O. Box 3614
5800 Hannum
Culver City, CA 90231

Offeror's Background:
Since 1974, Integrated Computer Systems has conducted vendor-independent, state-of-the-art courses for over 50,000 participants from companies like: AT&T, ROLM, Burroughs, DEC, NASA, Bell Labs and IBM. Our courses in advanced technology include: software engineering & management; microprocessors, computer networks, computer graphics, artificial intelligence, signal processing and other applications of electronics, computers & communications.

Instructor(s)
Integrated Computer Systems
Staff

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 4 days. ***Available:*** 2/86. For further information ***contact*** Yolande Amundson, Mgr. Ed. Svcs. at telephone (213)417-8888. The best time to call is 6:00-4:00 PST.

Offeror's Comments :
The course teaches the participants how to: design reliable and fault-tolerant systems; make hardware/software/firmware tradeoffs; implement real-time and interrupt driven controls; select bus structures and protocols, utilize host/target software development tools; integrate and test embedded systems; and manage a system development project.

Ada Programming Workshop (Course 335)

The ***objective*** is to teach Ada programming by using a workstation with hands-on exercises in designing and testing Ada programs utilizing a validated Ada compiler.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes C, FORTRAN, PL/1 and Pascal. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as Ada Language Reference Manual and lecture notes. The Sun Microsystems ***computer*** running UNIX4.2BSD and the Telesoft Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Integrated Computer Systems
5800 Hannum Ave.
P.O. Box 3614
Culver City, CA 90231

Offeror's Background:
Since 1974, Integrated Computer Systems has conducted vendor-independent, state-of-the-art courses for over 50,000 participants from companies like DEC, NASA,Bell Labs and IBM. Our courses in advanced technology include: software engineering & management; microprocessors, computer networks, computer graphics, artificial intelligence, signal processing and other applciations of electronics, computers & communications.

Pricing information: $1095 includes materials; group discount available. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 4 days. ***Available:*** 2/86. For further information ***contact*** Yolande Amundson, Mgr. Ed. Svcs. at telephone (213)417-8888. The best time to call is 6:00-4:00 PST.

Offeror's Comments :
The course emphasizes hands-on experience that includes: writing interactive Ada programs, developing reusable packages, implementing a database in Ada, simulating device drivers and debugging run-time errors.

Integrated Computer Systems

Software Requirements, Specifications & Tests

The ***objective*** is to provide guidelines & methods for defining requirements, developing specifications and integrating test plans early in s/w development cycle.

The course is ***oriented*** toward software engineering methodologies. The Ada ***concepts*** covered include real-time programming. The ***application area*** emphasized is impacts of Ada; industry standards & mil. specs.. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. The course ***materials*** include lecture notes and a workbook. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Integrated Computer Systems
5800 Hannum Ave.
P.O. Box 3614
Culver City, CA 90231

Offeror's Background:
Since 1974, Integrated Computer Systems has conducted vendor-independent, state-of-the-art courses for over 50,000 participants from companies like: AT&T, ROLM, Burroughs, DEC, NASA, Bell Labs and IBM. Our courses in advanced technology include: software engineering & management; microprocessors, computer networks, computer graphics, artificial intelligence, signal processing and other applications of electronics, computers & communications.

Pricing information: $995 includes materials; group discount available. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 4 days. ***Available:*** 2/86. For further information ***contact*** Yolande Amundson, Mgr. Ed. Svcs. at telephone (213)417-8888. The best time to call is 6:00-4:00 PST.

Offeror's Comments :
The participant learns how to: use systematic techniques for analyzing and documenting end-user requirements; generate software requirements; develop detailed specifications for software design and test; incorporate the unique constraints of real-time functions in requirements, specifications and test documents; validate software requirements and specifications and plan the sequencing of test and integration procedures.

Structured Design & Programming (Course 320)

The ***objective*** is to provide the fundamentals and practical applications of structured programming methods; to develop skills for producing programs.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include real-time programming, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Integrated Computer Systems
5800 Hannum Ave.
P.O. Box 3614
Culver City, CA 90231

Offeror's Background:
Since 1974, Integrated Computer Systems has conducted vendor-independent, state-of-the-art courses for over 50,000 participants from companies like AT&T, ROLM, Burroughs, DEC, NASA, Bell Labs and IBM. Our courses in advanced technology include: software engineering and management; microprocessors, computer networks, computer graphics, artificial intelligence, signal processing and other applications of electronics, computers and communications.

Instructor(s)
Integrated Computer Systems
Staff

Pricing information: $995 includes materials; group discount available. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 4 days. ***Available:*** 2/86. For further information ***contact*** Yolande Amundson, Mgr. Ed. Svcs. at telephone (213)417-8888. The best time to call is 6:00-4:00 PST.

Offeror's Comments:
The participant learns how to: write programs that execute correctly the first time; utilize structured software design methods for engineering and scientific application; increase programming productivity; improve program readability and reliability; detect logic & coding errors early; insure effective testing & documentation and reduce software development and maintenance costs.

Introduction to Ada Programming

The ***objective*** is to give an overview of the Ada language and to cover in detail the more advanced features of sequential Ada. The Ada ***concepts*** covered include subprograms, blocks, attributes, exception handling, strong data typing, packages and abstract data types. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Understanding Ada: A Software Engineering Approach by Bray and Pokrass, as well as exercises, quizzes, computer labs. The IN/7000 ***computer*** running UNIX V and the VADS ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Intellimac
Software Marketing Dept.
6001 Montrose Rd.
Rockville, MD 20852

Offeror's Background:
Intellimac is a ten year old company located in Rockville, Maryland, providing Ada and Ada-related hardware products, software engineering services, and training to government and industry.

Instructor(s)
Dr. Donald Ross, B.S., M.A.
Ms. Tina Lewis
Mr. Nils C. Brubaker

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 1 day. ***Available:*** now. For further information ***contact*** Intellimac S/W Marketing Dept. at telephone (301)984-8000.

Ada For Managers (101)

The ***objective*** is to understand the significance of Ada, the relationship of Ada to s/w engineering principles, and appreciate the purpose and benefits of unique Ada

The course is ***oriented*** toward software engineering methodologies, design concepts and management overview. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking and packages. The ***audience*** this course is intended for includes program managers and technical managers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: INTELLIMAC, Inc.
6001 Montrose Road
Rockville, MD 20852

Offeror's Background:
INTELLIMAC, a ten year old company located in Rockville, Maryland, provides Ada training and contractural software engineering services to government and industry. INTELLIMAC engineers have written over one half million lines of Ada code. INTELLIMAC's commitment to Ada required the company to develop internal training for new employees on the features and techniques of Ada programming. INTELLIMAC's Ada curriculum is the product of years of in-house experience.

Instructor(s)
Dr. Donald Ross, Ph.D., University of Chicago
Ms. Tina Lewis, M.A., University of Wisconsin
Mr. Nils C. Brubaker

Pricing information: $1500. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 1 day. ***Available:*** now. For further information ***contact*** Mr. Ed Eyler at telephone (301)984-8000. The best time to call is 9:00 a.m.-5:00 p.m. (EST).

Offeror's Comments :
This course is intended for managers and designers who need a conceptual understanding of Ada features and benefits.

Advanced Ada Programming

The ***objective*** is to teach system design in Ada, Ada's low level features, and concurrent programming.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include information hiding, reusability, real-time programming, generics, strong data typing, tasking and abstract data types. The ***audience*** this course is intended for includes software designers and programmers. Programming ***background*** required includes Ada. The course ***materials*** include the text Understanding Ada: A Software Engineering Approach by Bray and Pokrass, as well as exercises and quizzes. The IN/7000 ***computer*** running UNIX V and the VADS ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: Intellimac, Inc.
Software Marketing Dept.
6001 Montrose Rd.
Rockville, MD 20852

Offeror's Background:
Intellimac is a ten year old company located in Rockville, Maryland, providing Ada and Ada-related hardware products, software engineering services, and training to government and industry.

Instructor(s)
Dr. Donald Ross, BA, MA, PhD
Ms. Tina Lewis, BA, MA
Mr. Nils C,. Brubaker

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Intellimac S/W Marketing Dept. at telephone (301)984-8000.

Ada - The Language and Environment

The ***objective*** is to examine the potential for improving software productivity and quality via a structured approach suggesting modern software engineering.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes program managers, programmers, technical managers and engineers. Programming ***background*** required includes Pascal. The course ***materials*** include the Ada LRM and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Laboratoires de Marcoussis
Attn: Dr. Knut Ripken
Research Center CGE
F-91460 Marcoussis, France

Offeror's Background:
Participation in early Ada development (see foreword of Language Reference Manual), Ada compiler construction, study on APSE for the European Commission, Chairman of Ada-Europe 1983-1985.

Instructor(s)
Dr. Knut Ripken, Dr rer. nat., M.S. Comp. Sc., Dipl. Phys

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 2 days. ***Available:*** now. For further information ***contact*** Dr. Knut Ripken at telephone 3316449-1499. The best time to call is office hours.

Offeror's Comments :
The course has also been offered through Hyman Silver & Assoc., DPMA and State of the Art Seminars (Los Angeles). It has been held in French, German and English in France, Germany, Great-Britain, Italy, Israel and the USA.

Software Development with Ada

The ***objective*** is to introduce Ada and appropriate development methodologies.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Booch, as well as Ada Language Reference Manual and lecture notes. The Intellimac ***computer*** running Unix V and the VADS ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: Moog, Inc.
Electronics & Systems Division
Proner Airport
East Aurora, New York 14052-0018

Offeror's Background:
Moog, Inc. has implemented several real-time Ada systems, developed and taught an intoductory Ada course.

Instructor(s)
Terry Westly, B.A. Computer Science

Pricing information: available upon request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Terry Westly at telephone (716)662-1415. The best time to call is 9:00 - 5:00 p.m. EST.

Offeror's Comments :
This course was offered originally in cooperation with the local ACM Chapter, Niagara Frontier Chapter.

Ada Impact Issues

The ***objective*** is to aquaint management with the issues involved in transitioning to an Ada project and to provide a forum for discussion of these issues.

The course is ***oriented*** toward software engineering methodologies, management overview, management programming and programming support environments. The Ada ***concepts*** covered include validation, training support tools, risk and problem solving. The ***application area*** emphasized is all. The ***audience*** this course is intended for includes program managers and technical managers. No programming ***background*** is required. The course ***materials*** include compiler evaluation criteria and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: P. P. Texel & Company, Inc.
511 Bowne Road
Wayside, New Jersey 07712

Offeror's Background:
P. P. Texel & Company, Inc., formed in 1984, specializes in Ada training with an emphasis on software engineering. References supplied on request.

Instructor(s)
Putnam P. Texel

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. This course is part 1 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Putnam P. Texel at telephone (201)922-6323.

Offeror's Comments :
This course is part of a curriculum that P. P. Texel & Company designed for General Dynamics.

P. P. Texel & Company, Inc.

Design in Ada

The ***objective*** is to show how Ada can be used in the preliminary and detailed design phases of the life cycle.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical overview. The Ada ***concepts*** covered include object oriented design, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes designers, novices, analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes any PL. The course ***materials*** include the text Design with Ada by P. P. Texel, as well as a workbook and a study guide. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: P. P. Texel & Company, Inc.
511 Bowne Road
Wayside, New Jersey 07712

Offeror's Background:
P. P. Texel & Company, Inc., founded in 1984, specializes in Ada training with an emphasis on software engineering. References supplied on request.

Instructor(s)
Putnam P. Texel, BS, MS Mathematics

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 10 days. This course is part 2 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Putnam P. Texel at telephone (201)922-6323. The best time to call is weekdays- 9:00 - 5:00.

Offeror's Comments :
This course is part of a curriculum that P. P. Texel & Company designed for General Dynamics. This course may be taken in two parts: the first addresses the preliminary design phase and the second addresses the detailed design phase.

Ada Impact Issues

The ***objective*** is to acquaint management with the issues involved in transitioning to an Ada project and to provide a forum for discussion of the Ada transition issues.

The course is ***oriented*** toward software engineering methodologies, management overview, management programming and programming support environments. The Ada ***concepts*** covered include validation, training and problem solving. The ***application area*** emphasized is all. The ***audience*** this course is intended for includes program managers and technical managers. No programming ***background*** is required. The course ***materials*** include compiler evaluation criteria and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: P. P. Texel & Company, Inc.
511 Bowne Road
Wayside, New Jersey 07712

Offeror's Background:
P. P. Texel & Company, Inc., formed in 1984, specializes in Ada training with an emphasis on software engineering. References supplied on request.

Instructor(s)
Putnam P. Texel, BS, MS Mathematics

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 1 day. This course is part 3 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Putnam P. Texel at telephone (201)922-6323. The best time to call is weekdays- 9:00 a.m. - 5:00 p.m..

Offeror's Comments: --
This course is part of a curriculum that P. P. Texel & Company designed for General Dynamics.

Coding in Ada for Experienced Programmers

The ***objective*** is to code well designed Ada programs and to learn the syntax and semantics of Ada.

The course is ***oriented*** toward software engineering methodologies and technical programming. The Ada ***concepts*** covered include Machine representation specs, pragmas, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices and programmers. Programming ***background*** required includes any PL. The course ***materials*** include the text Introductory Ada: Packages for Programming, as well as a workbook and a study guide. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel and general public.

Name and Address of offeror: P. P. Texel & Company, Inc.
511 Bowne Road
Wayside, New Jersey 07712

Offeror's Background:
P. P. Texel & Company, Inc., formed in 1984, specializes in Ada training with an emphasis on software engineering. References supplied on request.

Instructor(s)
Putnam P. Texel, BS, MS Mathematics

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 10 days. This course is part 3 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Putnam P. Texel at telephone (201)922-6323. The best time to call is weekdays- 9:00 - 5:00.

Offeror's Comments :
This course is part of a curriculum that P.P. Texel & Company designed for General Dynamics. The designs that are produced in "Design with Ada" are coded in this class.

Ada Software Engineering Workshop

The ***objective*** is to provide practice in the use of good software engineering techniques, to write well structured Ada, and to fully exploit Ada constructs on complex programs.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is command & control and real-time. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as Ada Language Reference Manual, lecture notes, a workbook and a study guide. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students and general public.

Name and Address of offeror: Pragmatics, Inc.
Attn: J. McCallen
145 W. 12th St. Suite 1-1
New York, NY 10011

Offeror's Background:
24 yrs. experience in system development on real-time, scientific, and on-line systems. First taught Algol in 1962. Studied Ada with principle developers. Contributing Editor for Ada in Journal of Pascal and Ada. Taught classes in Structured Design, and Structured Programming during 8 years of independent consulting.

Instructor(s)
David Bulman, System development and instruction.
Kate Bulman, 20 years using Algol and Pascal
Paul Kimpel, Ada language developer

Pricing information is available on request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 5 days or 35 hours. ***Available:*** now. For further information ***contact*** John J. McCallen at telephone (212)924-9112. The best time to call is 9:00-5:00pm Mon-Fri..

Offeror's Comments :
Our course is built around a large case study for which complete Ada is provided. Our experiences show that effective use of a 5 day workshop rules out use of computers during class session, since the mechanics of editors & operating systems interfere with actual subject matter.

Pragmatics, Inc.

Ada Training Course

The ***objective*** is to aquaint engineers with a working knowledge of the Ada programming language and software engineering concepts.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes engineers. No programming ***background*** is required. The course ***materials*** include the text Understanding Ada: A Software Engineering Approach by Bray & Pokrass, as well as Ada Language Reference Manual and lecture notes. The DEC VAX 8600 ***computer*** running VMS and the Telesoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Rockwell International
Autonetics Strategic Systems Division
3370 Miraloma Ave. MC: 031-GA21
Anaheim, California 92803-4192

Offeror's Background:
Autonetics Strategic Systems Division (ASSD) has over 20 years experience in the design of large software systems. In the recent past, several overview of Ada courses have been offered. IR & D efforts have produced Ada tools and garnered environment experience.

Instructor(s)
Donald D. Toy, BS, Informational Computer Sciences

Pricing information: available upon request. This course is ***scheduled*** periodically, based on demand. The course is taught at offering organization's site. The ***length*** of course is 15 weeks. ***Available:*** now. For further information ***contact*** Donald D. Toy at telephone (714)762-7311. The best time to call is 4:00 PST.

Offeror's Comments :
This course is designed for teaching 20-25 students the Ada programming language in 15 weeks. Emphasis is on hands-on experience which strongly reinforces the material learned. The course is eight hours per week which is equally divided between hands-on lab time and lecture.

Software Engineering Principles

The ***objective*** is to present software engineering principles using Ada as the vehicle language.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and programming support environments. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include lecture notes. The DEC VAX 8600 ***computer*** running VMS and the DEC Ada, ICSC Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Rockwell International
Collins Government Avionics Division
400 Collins Road, N.E.
Cedar Rapids, Iowa 52498

Instructor(s)
Helen Romanowsky, BS, MS Computer Science

Pricing information: available upon request. This course is ***scheduled*** periodically, based on demand. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** Helen E. Romanowsky at telephone (319)395-3868. The best time to call is 8:00 - 4:00 p.m. CST.

Introduction to Ada

The ***objective*** is to present Ada concepts and their relationship to software engineering and to give participants programming experience with Ada.

The course is ***oriented*** toward software engineering methodologies and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, packages, abstract data types and problem solving. The ***application area*** emphasized is avionics. The ***audience*** this course is intended for includes novices, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include programming examples and lecture notes. The DEC VAX 8600 ***computer*** running VMS and the DEC Ada, ICSC Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Rockwell International
Collins Government Avionics Division
400 Collins Road N.E.
Cedar Rapids, Iowa 52498

Instructor(s)
Helen E. Romanowsky, BS, MS Computer Science

Pricing information is available on request. This course is ***scheduled*** periodically, based on demand. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** Helen E. Romanowsky at telephone (319)395-3868. The best time to call is 8:00 A.M. - 4:00 P.M. CST.

Offeror's Comments :
This course is available on videotape.

ADAP - An Ada Program Design Language

The ***objective*** is to present a design language which includes the features of the Ada language and also encourages abstract description of processes.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is real-time applications. The ***audience*** this course is intended for includes novices, program managers, programmers and technical managers. Programming ***background*** required includes FORTRAN. The course ***materials*** include the text ADAP Ada Program Design Language: User's Guide by SofTech, Inc., as well as lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include government personnel.

Name and Address of offeror: SofTech, Inc.
3100 Presidential Drive
Fairborn, OH 45324
(Attn: Glenn Kersnick)

Offeror's Background:
SofTech is a recognized leader in Ada technology with development of one of the four prototype language designs, development of the Ada Compiler Validation Capability and development of the Ada Language System. Mr. Kersnick has taught courses in FORTRAN, Pascal, and the Ada language, participated in an Ada Syntax Directed Editor development and updated this course.

Instructor(s)
Glenn Kersnick, M.S. CS FORTRAN-12yrs,Pascal-4yrs,Ada-2y

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 4 days. ***Available:*** now. For further information ***contact*** Glenn Kersnick at telephone (513)429-2771. The best time to call is 8:00am-2:00pm EST.

Offeror's Comments :
Although primarily intended for programmers familiar with the Ada language, this course has proven beneficial as an introduction to the language.

SofTech, Inc.

Instructor's Course Module (S500)

The ***objective*** is to familiarize future instructors with the structure and components of the Army curriculum; to teach the special considerations in teaching certain modules.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is Ada training. The ***audience*** this course is intended for includes Ada instructors, analysts and programmers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech
460 Totten Pond Road
Waltham, MA 02254-9197

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in Ada since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information: available upon request. This course is ***scheduled*** as customer determines. The course is taught at customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30 a.m.-5:30 p.m. EST.

Offeror's Comments :
This course consists of a core plus five independent modules focusing on different segments of the Army sponsored portions of the curriculum. This core can be taught alone or with any number of these five focus modules.

Ada Language System (ALS) User Course (E300)

The ***objective*** is to train people in use of Ada Language System (ALS).

The course is ***oriented*** toward programming support environments. The Ada ***concepts*** covered include problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes any lang. The course ***materials*** include lecture notes and a workbook. The VAX ***computer*** running VMS and the ALS Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in Ada since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System(ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 10 days. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone 617-890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
Describes design features of ALS, teaches how to use all ALS tools accessible to general user, shows how ALS supports configuration management, shows the development of an Ada program from compilation to debugging, and provides extensive hands-on exercises included in course.

Ada Language System (ALS) Overview (E102)

The ***objective*** is to provide an understanding of the complete software development in which Ada software is developed.

The course is ***oriented*** toward programming support environments. The Ada ***concepts*** covered include Structure of the ALS; ALS tools. The ***audience*** this course is intended for includes contracts/marketing staff, novices, analysts, program managers, programmers and technical managers. Programming ***background*** required includes prog exp. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
We have been a leader in the Ada community since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at various locations. The ***length*** of course is 1 day. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone 617-890-6900. The best time to call is 8:30-5:30 EST.

Offeror's Comments :
This course provides an understanding of the complete software development environment in which Ada software is developed. The goals and scope of the ALS are stressed.

Ada Language System (ALS) Administrator Course
(E402)

The ***objective*** is to train people to be ALS Administrators.

The course is ***oriented*** toward programming support environments. The Ada ***concepts*** covered include general concepts. The ***audience*** this course is intended for includes system administrators, computer operator. Programming ***background*** required includes any PL. The course ***materials*** include exercises and lecture notes. The VAX ***computer*** running VMS and the ALS Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in Ada since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 3 days. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
ALS User Course and knowledge of VAX/VMS is prerequisite for this course. Extensive hands-on exercises included in the course. Topics include: how to install ALS, authorizing ALS users, backup, and control of ALS ACP and Index Files.

Real-Time Concepts (L303)

The ***objective*** is to give managers an understanding of issues and real-time programming using the Ada language.

The course is ***oriented*** toward design concepts and management overview. The Ada ***concepts*** covered include real-time programming and tasking. The ***audience*** this course is intended for includes technical managers. Programming ***background*** required includes Ada syntax. The course ***materials*** include glossary and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
406 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada language since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 1 day. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
This course teaches a conceptual level, approaches to real-time programming emphasizing: synchronous/asynchronous system design, Ada tasking, interrupt handling, and the role of a run-time system.

Ada Orientation for Managers (L101)

The ***objective*** is to give managers an overview of the development and features of Ada.

The course is ***oriented*** toward management overview. The Ada ***concepts*** covered include a general overview. The ***audience*** this course is intended for includes program managers and technical managers. Programming ***background*** required includes any PL. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitve edge. We have been a leader in Ada since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Widler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
The course will emphasize: background and rationale for the Ada language, how the Ada language is different from other programming languages, what the Ada language will do for your organization, current status of Ada Language, and what to expect in the future.

Ada Technical Overview (L102)

The ***objective*** is to develop a feel for what constitutes proper Ada style by giving the student an overview of the development and features of the Ada language.

The course is ***oriented*** toward technical overview. The Ada ***concepts*** covered include general overview. The ***audience*** this course is intended for includes programmers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in Ada since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
The course will emphasize: background and rationale for the Ada language, Department of Defense language requirements, a top-down view of the Ada language, Ada features illustrated through examples, and a large system development. This course prepares the student for Basic Ada Programming (L202).

Real Time Systems In Ada (L401)

The ***objective*** is to cover the concepts of concurrent programming as they apply to real-time systems.

The course is ***oriented*** toward design concepts and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, tasking, packages and problem solving. The ***audience*** this course is intended for includes analysts and programmers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes and a workbook. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada program since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 5 days. This course is part 3 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
In this course you will learn: the tasking features of the Ada language; the use of Ada tasking to solve problems in real-time systems; recognizing issues affecting the performance; and when not to be concerned with performance. This course is the third in the Ada programming sequence beginning with Basic Ada Programming (L202) and Advanced Ada Topics (L305).

Advanced Ada Topics (L305)

The ***objective*** is to teach the student modern abstraction concepts and the related facilities in the Ada language.

The course is ***oriented*** toward design concepts and technical programming. The Ada ***concepts*** covered include Implementation dependent features, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts and programmers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes and a workbook. The customer's ***computer*** and the customer's ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada language since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 10 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
In this course you will: learn classic algorithms and data structures for common programming problems; learn, through numerous examples, how to use data abstraction effectively, including the use of Ada generic units, and gain full working knowledge of all Ada types and control structures. This course is intended to follow Basic Ada Programming (L202).

AD-A169 892 CATALOG OF RESOURCES FOR EDUCATION IN ADA (TRADE NAME) AND SOFTWARE ENGINEERING (CREASE) VERSION 4.0(U) IIT RESEARCH INST ROME NY MAY 86 MDA903-83-C-0306 2/4

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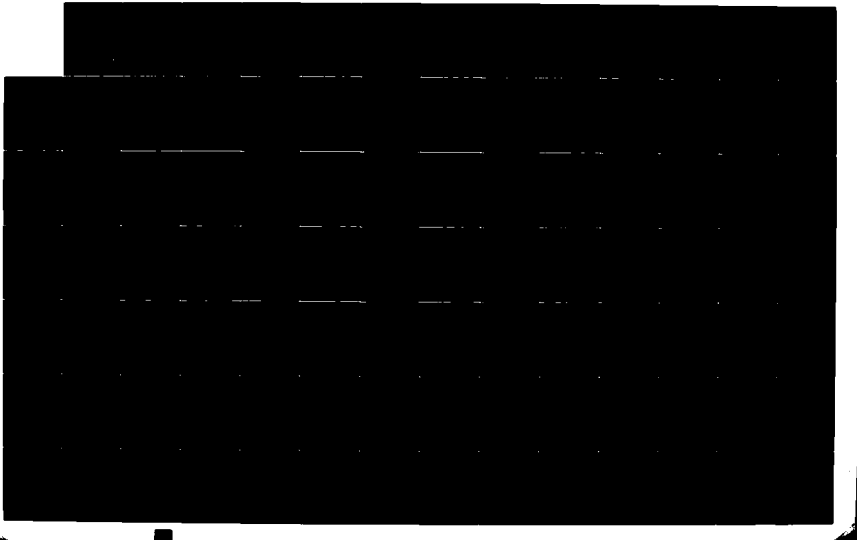

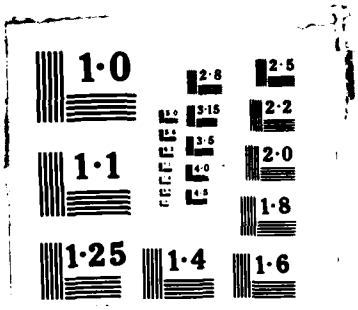
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Advanced Ada Topics (L305)

The ***objective*** is to teach the student modern abstraction concepts and the related facilities in the Ada language.

The course is ***oriented*** toward design concepts and technical programming. The Ada ***concepts*** covered include Implementation dependent features, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts and programmers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes and a workbook. The customer's ***computer*** and the customer's ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada language since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 10 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
In this course you will: learn classic algorithms and data structures for common programming problems; learn, through numerous examples, how to use data abstraction effectively, including the use of Ada generic units, and gain full working knowledge of all Ada types and control structures. This course is intended to follow Basic Ada Programming (L202).

Introduction to Ada· A High Order Language (L103)

The ***objective*** is to introduce the assembler language programmer to the concept of high order languages using the Ada language.

The course is ***oriented*** toward technical overview. The Ada ***concepts*** covered include control structures, subprograms, exception handling, strong data typing, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers. Programming ***background*** required includes assembly. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada community since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
This course emphasizes features of high order languages: readability, portability, reusability, efficiency; programming for the abstract machine vs. programming for the hardware, understanding the HOL by understanding the abstract machine, introduction to data types, control structures, programming in the large, implementation of the language.

SofTech, Inc.

Basic Ada Programming (L202)

The ***objective*** is to teach the student to write basic Ada programs. This course is aimed at giving thorough hands-on training in the effective use of the Ada language.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include subprograms,control structures, exception handling, generics, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts and programmers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes and a workbook. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada language challenge and maintain your competitive edge. We have been a leader in the Ada program since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada language and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 10 days. This course is part 1 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
This course emphasizes: lexical elements, introduction to data, enumeration types and control structures, numeric types, record types, program structure and separate compilation, using library units, exceptions, and other language features. The course can be offered in a 5-day lecture version. It is the first in a series of three programming courses that include Advanced Ada Topics (L305) and Real-Time Systems in Ada (L401).

Ada for Software Managers (L201)

The ***objective*** is to teach students how to develop and recognize high quality software design in the Ada language.

The course is ***oriented*** toward management programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes technical managers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada language challenge and maintain your competitive edge. We have been a leader in the Ada program since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada language and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 3 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
In this course you will: gain a thorough reading knowledge of the Ada language, learn to recognize proper and improper uses of all Ada language constructs, understand the inevitable design trade-offs, learn to recognize the signs of a poor design, decide when it's time to intervene, and decide which decisions are best left to advisors.

SofTech, Inc.

Using the Ada Language Reference Manual (L402)

The ***objective*** is to teach students how to interpret correctly the Ada Language Reference Manual.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include use of LRM, I/O, subprograms, exception handling, generics, strong data typing, tasking and packages. The ***audience*** this course is intended for includes quality assurance engineers, analysts and programmers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada language since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 2 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
This course will acquaint the participant with the Ada Language Reference Manual: syntax notation, language terms, references, annexes, and appendices.

Ada Program Design Language (M300)

The ***objective*** is to teach students to use ADAP as a design tool at various levels.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and technical managers. Programming ***background*** required includes Ada syntax. The course ***materials*** include lecture notes and a workbook. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
We have been a leader in the Ada program since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech staff

Pricing information is available on request. This course is ***scheduled*** at specific times and dates. The course is taught at various locations. The ***length*** of course is 4 days. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30-5:30 EST.

Offeror's Comments :
This course emphasizes features of high order languages: readability, portability, reusability, efficiency, programming for the hardware, understanding the HOL by understanding the abstract machine, introduction to data types, control structures, programming in the large, and implementation of the language.

Software Engineering Methodologies (M201)

The ***objective*** is to provide a thorough understanding of software methodologies and how they may be used with the Ada language.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include problem solving. The ***audience*** this course is intended for includes analysts and programmers. Programming ***background*** required includes any. The course ***materials*** include selected readings, lecture notes and a workbook. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada language since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
The course emphasizes principles of software engineering, life-cycle concepts, survey of software methodologies, and scope of applicability of different methods within the life-cycle.

Programming Methodology (M203)

The ***objective*** is to teach coding and documentation conventions, structured programming, stepwise refinement, and programming style.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include problem solving. The ***audience*** this course is intended for includes analysts and programmers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada program since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 2 days. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
This course teaches: modern coding techniques applicable to the Ada language, the responsibility of the individual programmer, and the technical background necessary to apply the techniques. This course is strongly recommended as a companion course to Basic Ada Programming (L202).

Introduction to Software Engineering (M102)

The ***objective*** is to teach the fundamental concepts of software engineering to programmers, software designers, and software managers.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include relationship of S/W engineering to Ada. The ***audience*** this course is intended for includes analysts and programmers. No programming ***background*** is required. The course ***materials*** include glossary, selected readings and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada program since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 2 days. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
In this course you will: develop a conceptual understanding of software engineering concepts, develop an overview understanding of software engineering methods and gain insight into the relationship between software engineering and the Ada language. This course is primarily intended as a prerequisite for Basic Ada Programming (L202).

Software Engineering for Managers (M101)

The ***objective*** is to teach managers modern software engineering concepts.

The course is ***oriented*** toward software engineering methodologies. The Ada ***concepts*** covered include relationship of S/W engineering to Ada. The ***audience*** this course is intended for includes program managers and technical managers. No programming ***background*** is required. The course ***materials*** include glossary, selected readings and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
SofTech is uniquely qualified to help you meet the Ada challenge and maintain your competitive edge. We have been a leader in the Ada program since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. The best time to call is 8:30am-5:30pm EST.

Offeror's Comments :
This course emphasizes historical perspectives,techniques to manage the software process, and techniques to manage the software product.

System Operability Evaluation Methodology (M200)

The ***objective*** is to establish understanding of system requirements using structured analysis techniques; to teach development of concise, complete s/w specs.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include problem solving. The ***application area*** emphasized is system operability. The ***audience*** this course is intended for includes senior technical staff, analysts, technical managers and engineers. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees and government personnel.

Name and Address of offeror: SofTech, Inc.
460 Totten Pond Road
Waltham, MA 02254

Offeror's Background:
We have been a leader in the Ada language since 1975 and are working on a number of government Ada contracts including the Army's Ada Language System (ALS) programming support environment. SofTech has developed an extensive set of Ada and ALS training courses under Army sponsorship.

Instructor(s)
SofTech Staff

Pricing information is available on request. This course is ***scheduled*** as customer determines. The ***length*** of course is 3 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Beverly Vidler at telephone (617)890-6900. *The best time to call is* 8:30-5:30 EST.

Offeror's Comments :
This cou[illegible]eaches an appreciation of the factors and characteristics of an operable system as well as the skills to support its development.

Ada Programming

The ***objective*** is to demonstrate sound working knowledge of Ada and write programs in Ada using the techniques learned during the course.

The course is ***oriented*** toward management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is hands-on experience. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language such as: FORTRAN, PL/1, LISP, COBOL, ALGOL, APL, BASIC, Jovial, assembly and Pascal. The course ***materials*** include the text Programming in Ada by John G. P. Barnes, as well as lecture notes, a workbook and a study guide. The Vax 11 ***computer*** running VMS and the SD-Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Systems Designers Software, Inc.
444 Washington Street
Woburn, MA 01801

Offeror's Background:
Systems Designers has served the defense community for over 17 years in consulting services, education and training and product development, as well as being involved in the development of Ada since its inception.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 5 days. This course is part of a ***series***. ***Available:*** 02/86. For further information ***contact*** Jacqui S. Dowsett at telephone (617)935-8009. The best time to call is 9AM to 5PM.

Offeror's Comments :
These high quality courses were developed under the direct supervision of John Barnes and are unique in their thorough approach to cover basic Ada concepts while providing in-depth hands-on experience.

Ada Design

The ***objective*** is to learn to identify features which make up good systems/program design and to take advantage of design features of Ada to write effective programs.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview and technical overview. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers and engineers. Programming ***background*** required includes experience in any high order language such as: FORTRAN, PL/1, LISP, COBOL, ALGOL, APL, BASIC, Jovial, assembly and Pascal. The course ***materials*** include the text Programming in Ada by John Barnes, as well as lecture notes, a workbook and a study guide. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Systems Designers Software, Inc.
444 Washington Street
Woburn, MA 01801

Offeror's Background:
Systems Designers has served the defense community for over 17 years in consulting services, education and training and product development. SD has been involved in the development of Ada since its inception.

Instructor(s)
staff

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 5 days. This course is part of a ***series***. ***Available:*** 2/86. For further information ***contact*** Jacqui S. Dowsett at telephone (617)935-8009. The best time to call is 9:00AM-5:00PM.

Offeror's Comments :
These high quality courses were developed under the direct supervision of John Barnes and are unique in the Ada community in their thorough approach to cover basic Ada concepts while providing in depth hands- on experience.

Ada Software Engineering Workshop

The ***objective*** is to teach students to write well structured Ada, to use good, proven software engineering techniques, and to fully exploit Ada constructs on large programs.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, management programming and technical programming. The Ada ***concepts*** covered include large case study, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is command & control, and real-time. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as the Ada Bibliography, lecture notes and a workbook. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Technology Transfer Institute
741 10th Street
Santa Monica, CA 90402

Offeror's Background:
Twenty-five years experience in system development on real-time, scientific, and on-line systems. First taught ALGOL in 1962. Studied the Ada language with principal developers. Taught classes in structured design and structured programming during 10 years of independent consulting.

Instructor(s)
David Bulman, Course Author
Erin Kathleen Bulman, Course Author, 20yrs ALGOL & Pascal
Paul Kimpel, Ada program developer, consultant

Pricing information: $1295/student in Public Offerings This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Hal Levin at telephone (213)394-8305. The best time to call is 9:00-5:00 PST.

Offeror's Comments :
Since Ada's potential is exploited most fully in large programs where packages & other tools for modularity provide the reliability so hard to achieve in such large programs, our course is built around a large, well-designed case study for which complete Ada is provided. (More than 60 pages.)

Technology Transfer Institute

Ada Fundamentals: A Pragmatic Approach

The ***objective*** is to provide the student with a working knowledge of the fundamentals of the Ada language, and relate the features of Ada to the principals of software

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include program modularity, scope and visibility, exception handling, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, analysts, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Understanding Ada by Ken Shumate, as well as laboratory problems and solutions and lecture notes. The DEC VAX 8600 ***computer*** running VMS and the DEC VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Teledyne Brown Engineering
Ada Systems Department
788 Shrewsbury Avenue
Tinton Falls, NJ 07724

Offeror's Background:
IV&V contractor for Army ALS. IV&V contractor for Army Systems transitioning to Ada. Development of a series of Ada courses for technical and management staff. Delivery of Ada courses to over 300 students from 40 industrial & government organizations.

Instructor(s)
Holly Tauson-Conte, M.S. Computer Science, B.A. Mathematics

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Thomas J. Walsh at telephone (201)741-5008. The best time to call is 8:30 a.m. - 5:00 p.m. EST.

Offeror's Comments :
Ada education staff consists of 10 lecturers and laboratory assistants capable of delivering multiple simultaneous Ada Courses on a continuing basis. At least two instructors will be provided for each course.

Ada Program Design Language: Principles & Practice

The ***objective*** is to present principles of structured design and the Ada features which support these principles. Provide a basis for using Ada design as a bridge to sys. impl.

The course is ***oriented*** toward software engineering methodologies, design concepts and programming support environments. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes systems designers, analysts, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include the text System Design with Ada by R. J. A. Buhr, as well as lecture notes. The DEC VAX 8600 ***computer*** running VMS and the DEC VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Teledyne Brown Engineering
Ada Systems Department
788 Shrewsbury Avenue
Tinton Falls, NJ 07724

Offeror's Background:
IV&V contractor for Army ALS. IV&V contractor for Army Systems Transitioning to Ada. Development of a series of Ada courses for technical and management staff. Delivery of Ada courses to over 300 students from 40 industrial and government organizations.

Instructor(s)
Charles Finnell, B.S. Computer Science

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Thomas J. Walsh at telephone (201)741-5008. The best time to call is 8:30 a.m. - 5:00 p.m. EST.

Offeror's Comments :
Ada education staff consists of 10 lecturers and laboratory assistants capable of delivering multiple simultaneous Ada courses on a continuing basis. At least two instructors will be provided for each course.

Teledyne Brown Engineering

Ada Programming: Advanced Features & Concepts

The ***objective*** is to present advanced features & concepts of Ada to provide a broad understanding of these features and their usage in large system development.

The course is ***oriented*** toward software engineering methodologies, design concepts, management programming and technical programming. The Ada ***concepts*** covered include advanced record & access types, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include the text Understanding Ada: A Software Engineering Approach by G. Bray & D. Pokrass, as well as Ada Language Reference Manual, problems, and lecture notes. The DEC VAX 8600 ***computer*** running VMS and the DEC VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Teledyne Brown Engineering
Ada Systems Department
788 Shrewsbury Avenue
Tinton Falls, NJ 07724

Offeror's Background:
IV&V contractor for Army ALS. IV&V contractor for Army Systems Transitioning to Ada Development of a series of Ada courses for Technical and Management staff. Delivery of Ada courses to over 300 students from 40 industrial and government organizations.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Thomas J. Walsh at telephone (201)741-5008. The best time to call is 8:30 a.m. - 5:00 p.m. EST.

Offeror's Comments :
An education staff consists of 10 lecturers and laboratory assistants capable of delivering multiple simultaneous Ada courses on a continuing basis. At least two instructors will be provided for each course.

An Overview of Ada

The ***objective*** is to provide an introduction to the Ada programming language and an update on recent developments.

The course is ***oriented*** toward management overview and technical overview. The Ada ***concepts*** covered include history, exception handling, generics, strong data typing, tasking and packages. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Vitro Corporation
14000 Georgia Avenue
Silver Spring, Maryland 20910

Offeror's Background:
Vitro Corp. is a major systems engineering company with more than 35 years experience in designing and building defense systems. The ongoing efforts of our Software Engineering Program insure that we remain at the forefront of software development technology. For several years, Vitro has maintained an Ada programming capability and has supported the Ada-related activities of ACM's SIGAda, NSIA, and the IEEE Computer Society.

Pricing information: available upon request. This course is ***scheduled*** periodically, based on demand. The course is taught at various locations. ***Available:*** Now. For further information ***contact*** John I. Moore, Jr. at telephone (301)231-3080. The best time to call is 8:00 am-4:00 pm EST.

Offeror's Comments :
This course is available to interested organizations upon request.

Vitro Corporation

Introduction to Ada

The ***objective*** is to provide hands-on experience with basic Ada features, emphasizing principles of structured programming and s/w engineering supported by Ada.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is scientific & real-time programming. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Programming in Ada by J. G. P. Barnes, as well as Ada Language Reference Manual and lecture notes. The DEC VAX 8600 ***computer*** running VMS and the VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Vitro Corporation
14000 Georgia Avenue
Silver Spring, MD 20910

Offeror's Background:
Vitro Corp. is a major systems engineering company with more than 35 years experience in designing and building defense systems. The ongoing efforts of our Software Engineering Program insure that we remain at the forefront of software development technology. For several years, Vitro has maintained an Ada programming capability and has supported the Ada-related activities of ACM's SIGAda, NSIA, and the IEEE Computer Society.

Instructor(s)
John I. Moore, Jr., Ph.D Math, ACM, IEEE-CS
Robert P. Ring, BS Math & CS, ACM (SigAda)

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** John I. Moore, Jr. at telephone (301)231-3080. The best time to call is 8:00am-4:00pmEST.

Offeror's Comments :
This is the beginning course in Vitro's Ada training program for real-time and scientific programmers. It is available to interested organizations upon request.

Advanced Ada Programming

The ***objective*** is to provide intensive hands-on programming experience with advanced Ada features. Ada's support for data abstraction and concurrent prog. are emphasized.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is scientific and real-time programming. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include the text Ada: An Advanced Introduction by Narain Gehani, as well as Ada Language Reference Manual and lecture notes. The DEC VAX 8600 ***computer*** running VMS and the VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees.

Name and Address of offeror: Vitro Corporation
14000 Georgia Avenue
Silver Spring, MD 20910

Offeror's Background:
Vitro Corporation is a major systems engineering company with more than 35 years experience in designing and building defense systems. The ongoing efforts of our Software Engineering Program insure that we remain at the forefront of software development technology. For several years, Vitro has maintained an Ada programming capability and has supported the Ada-related activities of ACM's SigAda, NSIA and the IEEE Computer Society.

Instructor(s)
John I. Moore, Jr., Ph.D Math, ACM, IEEE-CS

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. This course is part 2 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** John I. Moore,Jr. at telephone (301)231-3080. The best time to call is 8:00am-4:00pm EST.

Offeror's Comments :
This is the advanced course in Vitro's Ada training program for real-time and scientific programmers. It is available to interested organizations upon request.

Vitro Corporation

Software Maintenance: Tools, Techniques And Management Strategies

The course is ***oriented*** toward software engineering methodologies, design concepts and programming support environments. The Ada ***concepts*** covered include exception handling, packages and problem solving. The ***application area*** emphasized is Business and Systems Software. The ***audience*** this course is intended for includes analysts, program managers, programmers and technical managers. The course ***materials*** include the text Tutorial on Software Maintenance by Parikh and Zvegintzov, as well as lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Nicholas Zvegintzov
Software Mantenance
141 St. Marks Place #5F
Staten Island, NY 10301

Offeror's Background:
Offeror is editor of Software Maintenance News, and a pioneer in researching the upgrade of existing systems.

Instructor(s)
Nicholas Zvegintzov, M.A. (ACM, IEEECS, Authors Guild)

Pricing information is available on request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at customer's site and various locations. The ***length*** of course is 3 days. ***Available:*** now. For further information ***contact*** Nicholas Zvegintzov at telephone (718)816-5522.

Offeror's Comments :
"They who will not learn from history are fated to repeat it."

2.2.2. Government Agency Offerings

Course listings start on the next page.

Orientation to Ada Software Engineering

The ***objective*** is to acquaint managers with the major concepts of the Ada programming language and with the Ada language as it will be used for software development.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and programming support environments. The Ada ***concepts*** covered include APSE tools, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Ada Language Reference Manual, as well as a slide book. The type of ***organization*** offering the course is a government agency. Individuals ***eligible*** to attend the course include government personnel.

Name and Address of offeror: Keesler Technical Training Center
3390 TCHTG/TPMKPA
Kessler AFB, MS 39534

Offeror's Background:
The 3390 Technical Training Group, with 2 years instructional experience in Ada, is the focal point of United States Air Force Computer and Command Control Training

Pricing information is available on request. This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 3 days. ***Available:*** now. For further information ***contact*** Mrs. Mary Rivers at telephone (601)337-3110 or at Autovon 868-3110.

Offeror's Comments :
"The Ada Community" is provided as a student handout.

Ada Application Programmer

The ***objective*** is to train Ada Programmers in their roles and functions. Course concentrates on application programmer use of the Ada language in preparing programs.

The course is ***oriented*** toward design concepts, technical programming and programming support environments. The Ada ***concepts*** covered include APSE tools, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Booch, as well as Ada Language Reference Manual and a study guide. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a government agency. Individuals ***eligible*** to attend the course include government personnel.

Name and Address of offeror: Keesler Technical Training Center
3390 TCHTG/TPMKPA
Keesler AFB, MS 39534

Offeror's Background:
The 3390 Technical Training Group, with 2 years instructional experience in Ada, is the focal point for United States Air Force Computer and Command Control Training.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. The ***length*** of course is 20 days. ***Available:*** 4/86. For further information ***contact*** Mrs. Mary Rivers at telephone (601)377-3110 or at Autovon 868-3110.

Offeror's Comments :
This course is also available to NATO and DoD contractor personnel. If taught at offeror's site, the Burroughs XE500 running PT and the TeleSoft compiler are used. If taught at the customer's site, any validated compiler may be used.

Managers Orientation to Ada

The ***objective*** is to acquaint managers with the major management issues.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview and programming support environments. The Ada ***concepts*** covered include APSE tools, exception handling, generics, strong data typing, tasking and packages. The ***audience*** this course is intended for includes contract managers, program managers and technical managers. No programming ***background*** is required. The course ***materials*** include a slide book. The type of ***organization*** offering the course is a government agency. Individuals ***eligible*** to attend the course include government personnel.

Name and Address of offeror: Keesler Technical Training Center
3390 TCHTG/TPMKPA
Keelser AFB, MS 39534

Offeror's Background:
The 3390 Technical Training Group, with two years instructional experience in Ada, is the focal point for all United States Air Force Computer and Command Control Training.

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 1 day. ***Available:*** now. For further information ***contact*** Mrs. Mary Rivers at telephone (601)377-3110 or at Autovon 868-3110.

Offeror's Comments :
Course Orientation: management overview of Ada and its community. "The Ada Community" is a student handout. This course is also available to NATO and DoD contractor personnel.

Fundamentals of Ada Programming/Software Engineering

The ***objective*** is to familiarize technical managers and analysts/programmers with software engineering, design and major concepts of the Ada language.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include APSE tools, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Ada Language Reference Manual, as well as a slide book. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a government agency. Individuals ***eligible*** to attend the course include government personnel.

Name and Address of offeror: Keesler Technical Training Center
3390 TCHTG/TPMKPA
Keesler AFB, MS 39534

Offeror's Background:
The 3390 Technical Training Group, with 2 years of instructional experience in Ada, is the focal point for United States Air Force Computer and Command Control training.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 10 days. ***Available:*** now. For further information ***contact*** Mrs. Mary Rivers at telephone (601)377-3110 or at Autovon 868-3110.

Offeror's Comments :
If taught at offering organization's site, the Burroughs XE500 computer and TeleSoft compiler are used. If taught at other sites, any validated compiler may be used. "The Ada Community" will be provided as a student handout.

Keesler Technical Training Center

An Introduction to Ada for Engineers and Scientists

The ***objective*** is to communicate the essence of Ada and develop confidence in using Ada effectively.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes FORTRAN. The course ***materials*** include ANSI/MIL-STD-1815A (22 Jan 83) and lecture notes. The Data General MV-4000 ***computer*** and the ROLM ***compiler*** will be used. The type of ***organization*** offering the course is a government agency. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: US Army Material Sys Analysis Activity
Herbert E. Cohen
ATTN: DRXSY-MP
Aberdeen Proving Ground, MD 21005-5071

Offeror's Background:
Organized short video taped courses in mathematics and directed systems/software teams while associated with CUDC and CSC.

Instructor(s)
William Carlson, BSEE, MS Director Intermetrics (Wash Op)
CENTEC Corp.

Pricing information is available on request. This course is ***scheduled*** as customer determines. The course is taught at customer's site and various locations. The ***length*** of course is 10 hours. ***Available:*** now. For further information ***contact*** Herbert E. Cohen at telephone (301)278-6577 or at Autovon 283-6577. The best time to call is 10:00 hours.

Offeror's Comments :
Public sale will be requested via Army channels. If approved, the National Audio Visual Center, 8700 Edgeworth Drive, Capital Heights, MD 20743 will most likely handle sale. For further information, contact Ms. Christina Mugno at National Audio Visual Center (301)763-1882. Government agencies should contact Defense Audio Visual Agency to acquire a copy of the video tapes and documentation.

2.2.3. University Offerings

Course listings start on the next page.

Ada Programming

The ***objective*** is to provide a thorough treatment of the U.S. Department of Defense standard language Ada.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes Pascal. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as lecture notes. The IBM 4361 ***computer*** running VM/CMS and the Telesoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Slippery Rock University
Computer Science Department
Slippery Rock, PA 16057

Offeror's Background:
Professor Lin has extensive experience in structured programming, both in applications and teaching, in a number of imperative and procedural languages including Ada. He participated in the "Hands On Ada Workshop" conducted by the Washington, D.C. Chapter of the ACM. He has supervised several undergraduate projects in Ada and has planned, developed and implemented a software package for graphics.

Instructor(s)
Thomas T. Lin, MS, Computer Science

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** 9/86. For further information ***contact*** Thomas T. Lin at telephone (412)794-7133. The best time to call is 9:00 a.m.-4:00 p.m..

Offeror's Comments :
Programming in Ada will be studied by means of graduate examples and constant lab practice. Newer Ada concepts including packages, concurrency, generics and exceptions will be emphasized.

Introduction to Computer Science

The ***objective*** is to provide experience with fundamental alogorithmic problem solving, data structures and software engineering issues.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview and technical programming. The Ada ***concepts*** covered include exception handling, strong data typing, packages, abstract data types and problem solving. The ***application area*** emphasized is Engineering. The ***audience*** this course is intended for includes novices, program managers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include the text Introductory Ada: Packages for Programming by Putnam P. Texel, as well as Data Structures with Ada by Feldman, lecture notes and a study guide. The VAX-11/785 ***computer*** running UNIX and the Telesoft and Verdix ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a government agency. Individuals ***eligible*** to attend the course include government personnel, full-time students, graduate students and part-time students.

Name and Address of offeror: Air Force Institute of Technology
School of Engineering
Dept. of Mathematics & Computer Science
Wright-Patterson AFB, OH 45433

Offeror's Background:
Graduate School of the Air Force, offering Masters Degrees in Computer Science, Computer Systems, Information Systems and Computer Engineering, as well as other engineering disciplines. On going research in many software engineering-related areas, including Ada technology.

Instructor(s)
LCOL Richard R. Gross, Ph.D Computer Science

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** Lt. Col. Richard R. Gross at telephone (513)255-3098 or at Autovon 785-3098. The best time to call is 9-4 weekdays.

Offeror's Comments:
AFIT students include officers of the Air Force, Army, Navy, Marines and Coast Guard as well as civilian employees of the Department of Defense.

Effective Programming with Ada

The ***objective*** is to provide in-depth experience with alogorithmic problem solving, data structures, software engineering and the complete Ada language.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview and technical programming. The Ada ***concepts*** covered include engineering, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is engineering. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as Data Structures with Ada by Feldman, lecture notes and a study guide. The VAX-11/785 ***computer*** running UNIX/VMS and the Telesoft, Verdix and DEC ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a government agency. Individuals ***eligible*** to attend the course include government personnel, full-time students, graduate students and part-time students.

Name and Address of offeror: Air Force Institute of Technology
School of Engineering
Dept. of Mathematics & Computer Science
Wright-Patterson AFB, OH 45433

Offeror's Background:
Graduate school of the Air Force, offering Masters Degrees in Computer Science, Computer Systems, Information Systems and Computer Engineering, as well as other engineering disciplines. Ongoing research in many software engineering related areas, including Ada technology.

Instructor(s)
Lt. Col. Richard Gross, Ph.D Computer Science

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Lt. Col Richard Gross at telephone (513)255-3098 or at Autovon 785-3098. The best time to call is 9-4 weekdays.

Offeror's Comments :
AFIT students include officers of the Air Force, Army, Navy, Marines, and Coast Guard as well as civilian employees of the Department of Defense.

Advanced Software Environments

The *objective* is to understand issues involved with the emerging concepts of software environments.

The course is *oriented* toward software engineering methodologies, design concepts, technical programming and programming support environments. The Ada *concepts* covered include extending levels of abstraction, real-time programming, exception handling, generics, tasking, packages and abstract data types. The *application area* emphasized is engineering. The *audience* this course is intended for includes analysts, programmers, technical managers and engineers. Programming *background* required includes Ada. The course *materials* include the text Programming with APSE Software Tools by Freedman, as well as STONEMAN and lecture notes. The VAX-11/785 *computer* running UNIX/VMS and the Verdix and DEC *compiler* will be used. Students receive *hands-on* experience with the Ada language. The type of *organization* offering the course is a government agency. Individuals *eligible* to attend the course include government personnel, full-time students, graduate students and part-time students.

Name and Address of offeror: Air Force Institute of Technology
School of Engineering
Dept. of Mathematics & Computer Science
Wright-Patterson AFB, OH 45433

Offeror's Background:
Graduate school of the Air Force, offering Masters Degrees in Computer Science, Computer Systems, Information Systems and Computer Engineering, as well as other engineering disciplines. Ongoing research in many software engineering-related areas, including Ada technology.

Instructor(s)
MAJ Patricia Lawlis, M.S., Computer Systems
LCOL Richard R. Gross, PhD, Computer Science

Pricing information: available upon request. This course is *scheduled* at specific times and dates. The course is taught at offering organization's site. This course is part 2 in a *series* of 2. *Available:* 4/86. For further information *contact* Lt. Col. Richard R. Gross at telephone (513)255-3098 or at Autovon 785-3098. The best time to call is 9-4 weekdays.

Offeror's Comments :
AFIT students include officers of the Air Force, Army, Navy, Marines, and Coast Guard as well as civilian employees of the Department of Defense.

Air Force Institute of Technology

Programming in Ada

The ***objective*** is to introduce Computer Science majors to Ada and continue students' development of structured programming skills and concepts.

The course is ***oriented*** toward design concepts, technical overview and technical programming. The Ada ***concepts*** covered include files, exception handling, generics, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers. Programming ***background*** required includes Pascal. The course ***materials*** include the text Programming in Ada by J.G.P. Barnes. The DEC VAX-11/785 ***computer*** running VMS and the Telesoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Eastern Kentucky University
Dept of Math, Stat, & Comp. Sci.
Wallace 402
Richmond, KY 40475

Offeror's Background:
The department has offered the B.S. in Computer Science since 1978, and has offered the Ada course since Spring 1984.

Pricing information: $120 KY residents; $342 nonresidents. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 15 weeks. ***Available:*** now. For further information ***contact*** Dr. Charles Franke at telephone (606)622-5942. The best time to call is 9-5 EST.

Offeror's Comments :
This course is taught as a three-semester hour class, with 37 one-hour meetings in 15 weeks, plus a two-hour final examination. Students must have passed the first Computer Science class (# 185) to enroll. The course may be taken on a Pass-fail basis (with some restrictions) or may be taken as an audit, in which case no grade is assigned, and no formal credit is given.

Software Design

The ***objective*** is to teach software design concepts and methodologies including object oriented programming with Ada.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes Computer Science Majors. Programming ***background*** required includes Pascal. The course ***materials*** include the text Software Engineering With Ada by Booch, as well as technical papers and lecture notes. The HP 9836 ***computer*** running HPROS and the TeleSoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Furman University
Dept. of Computer Science
Greenville, SC 29613

Instructor(s)
Dr. John C. Kelly, Ph.D, Asst. Prof

Pricing information: $550. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** John C. Kelly at telephone (803)294-3221. The best time to call is 12-3 EST.

Furman University

Hands-On Programming With Ada

The ***objective*** is to teach the Ada programming language, with emphasis on the use of packages and a strong focus on the abstract data type. The entire language is covered.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is packages, abstract data types. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Grady Booch, as well as Data Structures with Ada by Feldman and lecture notes. The IBM 4381 ***computer*** running VM and the Telesoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: The George Washington University
Continuing Engineering Education Program
Washington, DC 20052

Offeror's Background:
This course has been offered many times on campus and at customer sites.

Instructor(s)
Michael B. Feldman, Associate Professor

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Michael B. Feldman at telephone (202)676-7593. The best time to call is any time.

Offeror's Comments :
Tailored contract courses at customer site are possible; contact Professor Feldman to discuss possibilities; in particular, any reasonable Ada compiler can be used to support the hands-on exercises.

Ada Business Programming and Design

The ***objective*** is to develop an understanding of a strongly typed language; to obtain practical experience in package design and tasking.

The course is ***oriented*** toward software engineering methodologies, design concepts, management programming and technical programming. The Ada ***concepts*** covered include file handling, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include the text Ada Programming with Applications by E. Vasilescu. The VAX-780 ***computer*** running VMS and the VAX Ada compiler ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Hofstra University School of Business
1000 Fulton Ave.
BCIS/QM Dept.
Hempstead, NY 11550

Instructor(s)
E. Vasilescu, Assoc. Prof, Ph.D

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 10 weeks. ***Available:*** now. For further information ***contact*** E. Vasilescu at telephone (516)560-5722.

Hofstra University School of Business

CSCI 3432 - Ada Programming Language

The ***objective*** is emphasize object oriented design in this first course of the Ada Programming series.

The course is ***oriented*** toward design concepts and technical programming. The Ada ***concepts*** covered include object oriented design, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is aerospace. The ***audience*** this course is intended for includes novices, analysts, programmers and engineers. Programming ***background*** required includes assembly and Pascal. The course ***materials*** include the text Programming in Ada by JGP Barnes, as well as audio visual support, MIL-Std-1815A and lecture notes. The VAX-11/750 ***computer*** running VMS and the DEC ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: University of Houston at Clear Lake
2700 Bay Area Blvd
Houston, TX 77058
Attn: Dr. Rodney L. Bown

Offeror's Background:
Dr. Bown, Ph.D Assoc. Prof., is the technical Coordinator for the NASA JSC/UHCL Ada Beta Test Site. Research interests include Ada, advanced computer architecture, and their application to the NASA space station.

Instructor(s)
Dr. Rod Bown, Ph.D Assoc. Prof.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 16 weeks or 48 hours. This course is part 1 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Dr. Rod Bown at telephone (713)488-9480. The best time to call is Mon/Wed.

Offeror's Comments :
The NASA Space Station Data Management System is used as the case study.

CSCI 4931

The ***objective*** is to examine methodologies and tools for the software life cycle. Topics include project database configuration management, MAPSE, and requirements expression.

The course is ***oriented*** toward software engineering methodologies, design concepts and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is software engineering. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include the text Software Engineering by Sommerville, I., as well as CAIS, A7, CORE documents, lecture notes and a workbook. The VAX-11 ***computer*** running VMS/DEC and the SofTech ALS ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, part-time students and general public.

Name and Address of offeror: University of Houston at Clear Lake
2700 Bay Area Blvd.
Houston, Texas 77058

Offeror's Background:
Dr. McKay is the university's Technical Director of the Joint NASA/ JSC UHCL Beta Test Site for ALS and AIE. He has been actively engaged in Ada language research since 1978 and has taught numerous seminars for industry for university personnel. He has conducted university credit courses in the Ada language since 1981. His research interest since 1978 has included utilization of the Ada language in systems and software engineering of distributed networks.

Instructor(s)
—Dr. Charles W. McKay, Ph.D, Assoc. Prof.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 16 weeks. This course is part 2 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Dr. Charles W. McKay at telephone (713)488-9480. The best time to call is Tuesday.

Offeror's Comments :
The length of the course is 48 hours over 16 academic weeks.

Systems Programming CSCI 4534

The ***objective*** is to provide detailed study, data structures & algorithms, of an Operating System Kernel. Study the internals of the OS Kernels: Unix, VAX's VMS, PRIME's Primos,

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is systems programming. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada, assembly and Pascal. The course ***materials*** include the text Systems Programming and Programming in Ada by Ray Turner and J.G.P. Barnes, as well as lecture notes. The DEC VAX-11/750 ***computer*** running VMS and the DEC ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: University of Houston at Clear Lake
2700 Bay Area Blvd
Houston, TX 77058

Offeror's Background:
Dr. Lekkos heads a task force at the University studying the use of the Ada language to develop tools that support software requirements definition. Dr. Leibfried teaches the Ada Programming Language and conducts research in signal processing.

Instructor(s)
Dr. Anthony Lekkos, Ph.D Computer Science, Associate Prof.
Dr. Ted Leibfried

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The ***length*** of course is 16 weeks. This course is part 3 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Dr. Rodney Bown at telephone (713)488-9480. The best time to call is Mon/Wed.

Offeror's Comments :
Length of course is 48 hours over a 16 week period. Each student is to develop an OS Kernel using Ada as the programming language. Object oriented design methodology is used for the design.

CTEC 6532 - Synthesis of Computer Networks

The ***objective*** is to teach life cycle concepts, principles and methodologies in the computer systems and software engineering of distributed networks.

The course is ***oriented*** toward software engineering methodologies, design concepts and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is networks. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include the text Distributed Systems by Lampson, et al, as well as documentation on: ALS, OSI, CAIS and lecture notes. The VAX-11/780 ***computer*** running VMS and the ALS ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include full-time students, graduate students and part-time students.

Name and Address of offeror: University of Houston at Clear Lake
2700 Bay Area Blvd.
Houston, TX 77058

Offeror's Background:
Dr. McKay, the University's Technical Director of the Joint NASA/JSC UH CL Beta Test Site for ALS and AIE. He has been actively engaged in Ada related research since 1978 and has taught numerous seminars for industry for University personnel and has conducted University credit courses in Ada since 1981. His research interests since 1978 have included the utilization of Ada in systems & software engineering of distributed networks.

Instructor(s)
Dr. Charles McKay, Ed.D Dir. of UH CL

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 16 weeks or 48 hours. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Rod Bown at telephone (713)488-9480. The best time to call is Mon/Wed.

Offeror's Comments :
The NASA Space Data Management System is used as the case study for a large complex network.

CSCI 5931 Software Project Development Using Ada

The ***objective*** is to develop and integrate software requirement for a large complex system.

The course is ***oriented*** toward design concepts, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is software requirements. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include the text Programming in Ada by J.G.P. Barnes, as well as handouts of papers on SREM, SPL/PSA, COR and lecture notes. The VAX-11/750 ***computer*** running VMS and the DEC ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include full-time students, graduate students, part-time students and general public.

Name and Address of offeror: University of Houston at Clear Lake
2700 Bay Area Blvd.
Houston, TX 77058

Offeror's Background:
Dr. Lekkos heads a task force at the University studying the use of Ada to develop tools that support software requirements definition.

Instructor(s)
Dr. Anthony Lekkos, Ph.D, Assoc. Prof. Consult., Mil. Exp.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 16 weeks or 48 hours. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Rod Bown at telephone (713)488-9480. The best time to call is Mon/Wed.

Offeror's Comments :
Students will develop tools and integrate them into a system. The case study is the NASA space station.

Advanced Computer Architecture (CTEC 5931)

The ***objective*** is to examine the design of concurrent processing computer architecture.

The course is ***oriented*** toward design concepts and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, tasking, packages and problem solving. The ***application area*** emphasized is computer architecture. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada, assembly and Pascal. The course ***materials*** include technical literature and lecture notes. The VAX-11/750 ***computer*** running VMS and the DEC ***compiler*** will be used. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include full-time students, graduate students, part-time students and general public.

Name and Address of offeror: University of Houston at Clear Lake
2700 Bay Area Blvd.
Houston, TX 77058
ATtn: Dr. Rodney Bown

Instructor(s)
Dr. Rodney Bown, Ph.D., Assoc. Prof.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 16 weeks. This course is part of a ***series***. ***Available:*** Aug 86. For further information ***contact*** Dr. Rod Bown at telephone (713)488-9480. The best time to call is Mon/Wed.

Offeror's Comments :
This course is required for the MS degree. The length of the course is 48 hours over 16 academic weeks. The course investigates the application of the Ada programming language in new concurrent computer architectures.

Basic Ada Programming (L202)

The ***objective*** is to teach students to write basic Ada programs through a hands-on approach.

The course is ***oriented*** toward design concepts, management overview, technical overview and technical programming. The Ada ***concepts*** covered include exception handling, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. The course ***materials*** include lecture notes, a workbook and a study guide. The VAX-11/780 ***computer*** running VMS and the Digital Equipment ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada courses for four years. Equipment available includes a VAX-11/780 equipped with Ada/Ed and DEC Ada Compiler and a laboratory with twenty terminals.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site. The ***length*** of course is 10 days. ***Available:*** now. For further information ***contact*** Dr. Philip W. Caverly at telephone (201)547-3291. The best time to call is 9:00 a.m. - 4:00 a.m. EST.

Offeror's Comments :
This course is part of the US Army's Ada Training Curriculum.

Introduction to Ada· A High Order Language (L103)

The ***objective*** is to introduce the assembler language programmer to the concept of high order languages using Ada.

The course is ***oriented*** toward design concepts, technical overview and technical programming. The Ada ***concepts*** covered include strong data typing, packages and abstract data types. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes assembly. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada courses for four years. Equipment available includes a VAX-11/780 equipped with Ada/Ed and DEC Ada Compiler and a laboratory with twenty terminals.

Instructor(s)
Dr. Philip Caverly

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at various locations. The ***length*** of course is 1 day. ***Available:*** now. For further information ***contact*** Dr. Philip Caverly at telephone (201)547-3291. The best time to call is 9:00 - 4:00 EST.

Offeror's Comments :
This course is part of the U.S. Army's Ada Training curriculum.

Ada Orientation for Managers

The ***objective*** is to give managers an overview of Ada. The course emphasizes the role of Ada in total project development.

The course is ***oriented*** toward management overview. The Ada ***concepts*** covered include generics, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, program managers and technical managers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada courses for four years. Equipment available includes a VAX-11/780 equipped with Ada/Ed and DEC Ada Compiler and a laboratory with twenty terminals.

Instructor(s)
Dr. Philip Caverly, Director Ada Technology Center
Dr. Philip Goldstein, Professor, C.S.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Philip Caverly at telephone (201)547-3291. The best time to call is weekdays 9-4 EST.

Offeror's Comments :
This course is part of the US Army's Ada Training Curriculum.

Introduction to Software Engineering (M102)

The ***objective*** is to teach the fundamental concepts of software engineering to programmers, software designers and software managers.

The course is ***oriented*** toward software engineering methodologies and design concepts. The ***application area*** emphasized is software engineering overview with some details. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include lecture notes and a workbook. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada Courses for four years. Equipment available includes a VAX-11/780 equipped with Ada/ED and DEC Ada Compiler and a laboratory with twenty terminals.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The ***length*** of course is 2 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Philip Caverly at telephone (201)547-3291. The best time to call is 9-4 EST.

Offeror's Comments :
This course is part of the US Army's Ada Training Curriculum.

Advanced Ada Topics (L305)

The ***objective*** is to teach the student modern abstraction concepts and the related facilities of Ada.

The course is ***oriented*** toward design concepts and technical programming. The Ada ***concepts*** covered include advanced data structures, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes, a workbook and a study guide. The VAX-11/780 ***computer*** running VMS and the Digital Equipment ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada courses for four years. Equipment available includes a VAX-11/780 equipped with Ada/Ed and DEC Ada compiler and a laboratory with twenty terminals. The instructors are co-authors of "An Introduction to Ada: A Top-Down Approach."

Instructor(s)
Dr. Phil Caverly, Director, Ada Technology Center

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site. The ***length*** of course is 10 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Philip W. Caverly at telephone (201)547-3291. The best time to call is 9-4 EST weekdays.

Offeror's Comments :
This course is part of the US Army's Ada Training Curriculum Dr. Caverly is also the Chairman of the Computer Science Dept. at Jersey City State College and the Director of the Ada Technology Center. Dr. Goldstein is the Associate Director of the Ada Technology Center. The instructors have been involved with Ada since 1982, and have trained over 1,000 government and industrial scientists in the past year.

Ada Technical Overview (L102)

The ***objective*** is to give the student an overview of the development and features of Ada.

The course is ***oriented*** toward design concepts, management overview and technical overview. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers and technical managers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada courses for four years. Equipment available includes a VAX-11/780 and DEC Ada Compiler and a laboratory with twenty terminals.

Instructor(s)
Dr. Philip Caverly, Director, Ada Technology Center
Dr. Phil Goldstein, Prof. C.S.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Philip Caverly at telephone (201)547-3291. The best time to call is 9:00 a.m. - 4:00 p.m. EST.

Offeror's Comments :
This course is part of the US Army's Ada Training Curriculum. Dr. Caverly is also the Chairman of the Computer Science Dept. at Jersey City State College and the Director of the Ada Technology Center. Dr. Goldstein is the Associate Director of the Ada Technology Center. The instructors have been involved with Ada since 1982, and have trained over 1,000 government and industrial scientists in the past year.

Software Engineering Methodologies (M201)

The ***objective*** is to provide a thorough understanding of software methodologies.

The course is ***oriented*** toward software engineering methodologies and design concepts. The ***application area*** emphasized is software engineering. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes L202, M101. The course ***materials*** include lecture notes and a workbook. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada Courses for four years. Equipment available includes a VAX-11/780 equipped with Ada/Ed and DEC Ada Compiler and a laboratory with twenty terminals.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at various locations. The ***length*** of course is 5 days. This course is part of a ***series***. For further information ***contact*** Dr. Philip W. Caverly at telephone (201)547-3291. The best time to call is 9-4 EST.

Offeror's Comments :
This course is part of the US Army's Ada Training Curriculum.

Software Engineering for Managers (M101)

The ***objective*** is to teach managers modern software engineering concepts.

The course is ***oriented*** toward software engineering methodologies and design concepts. The ***application area*** emphasized is software engineering overview. The ***audience*** this course is intended for includes program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada courses for four years. Equipment available includes a VAX-11/780 equipped with Ada/Ed and DEC Ada Compiler and a laboratory with twenty terminals.

Instructor(s)
Dr. Philip Caverly, Prof. C.S.
Dr. Philip Goldstein, Prof. C.S.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at various locations. The ***length*** of course is 1 day. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Philip W. Caverly at telephone (201)547-3291. The best time to call is 9:00 a.m. - 4:00 p.m. EST.

Offeror's Comments :
This course is part of the US Army's Ada Training Curriculum. Dr. Caverly is also the Chairman of the Computer Science Dept. at Jersey City State College and the Director of the Ada Technology Center. Dr. Goldstein is the Associater Director of the Ada Technology Center. The instructors have been involved with Ada since 1982, and have trained over 1,000 government and industrial scientists in the past year.

Programming Methodology (M203)

The ***objective*** is to teach coding and documentation conventions, structured programming, stepwise refinement, and programming style.

The course is ***oriented*** toward software engineering methodologies and design concepts. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes some Ada. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Jersey City State College
Ada Technology Center
Jersey City, NJ 07305

Offeror's Background:
The Center has been giving and developing Ada courses for four years. Equipment available includes a VAX 11/780 equipped with Ada/Ed and DEC Ada Compiler and a laboratory with twenty terminals.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at various locations. The ***length*** of course is 2 days. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Philip W. Caverly at telephone (201)547-3291. The best time to call is 9:00 a.m. - 4:00 p.m. EST.

Offeror's Comments :
This course is part of the U.S. Army's Ada Training Curriculum.

Advanced Topics in Programming Languages (CS 682)

The ***objective*** is to introduce Ada at the level necessary for developing systems programs.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is systems programming. The ***audience*** this course is intended for includes graduate students. Programming ***background*** required includes Pascal. The course ***materials*** include the text Ada: An Advanced Introduction by Gehani. The IBM 370 ***computer*** running VM/CMS and the NYU ADA/ED ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include full-time students, graduate students and part-time students.

Name and Address of offeror: Loyola Marymount University
Loyola Blvd. at West 80th Street
Los Angeles, CA 90045

Offeror's Background:
Computer Science Department of the University offers both undergraduate and graduate degrees. There are approximately 350 majors at this time.

Instructor(s)
George O. Petrovay, M.S. Computer Science

Pricing information: $680. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** George O. Petrovay at telephone (213)616-2620. The best time to call is 8:30 to 5.

Loyola Marymount University

Ada Fundamentals Training Program

The ***objective*** is to demonstrate the efficiency, reliability and portability of Ada. Gain experience in writing, testing, and modifying Ada programs.

The course is ***oriented*** toward design concepts, management overview and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts and programmers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Reference Manual for the Ada Programming Language, as well as lecture notes. The VAX 11/780 ***computer*** running VMS and the Digital VAX Ada ***compiler*** will be used. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Univ. of Maryland University College
The Conferences and Institutes Program
University Blvd. at Adelphi Road
College Park, MD 20742-1668

Offeror's Background:
The program is conducted be Teledyne Brown Engineering Staff: Thomas E. Kirchgessner, Ph.D. Senior Systems Analyst & Ada Program Manager for the Washington Office of Teledyne Brown Engineering; Sylvia M. Poole, B.S. Programmer/ Analyst for Washington Office of Teledyne Brown; Paul L. Lewis, M.S., Principal Systems Analyst in the Washington Office of Teledyne Brown Engineering.

Pricing information: $1500. This course is ***scheduled*** at specific times and dates. The course is taught at various locations. ***Available:*** 01/86. For further information ***contact*** John Lathrop at telephone (301)985-7195. The best time to call is 9 AM - 4 PM EST.

Offeror's Comments :
Courses are offered once a month, January thru June 1986. Lodging is available at The Center of Adult Education by calling (301)985-7303. To receive a course brochure, call (301)985-7157. Class size limited to 20 participants. 50% of class is hands-on.

CAPP 305 Introduction to Ada

The ***objective*** is to acquaint students with syntax and semantics of Ada as a language plus the proper use of the language within a software development organization.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Software Engineering with Ada by Booch. The VAX 11/780 ***computer*** running VMS-4 and the Digital-Version 1 ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: Univ. of Maryland University College
University Blvd. at Adelphi Road
College Park, MD 20742

Instructor(s)
Dr. Helmut Thiess

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site and various locations. This course is part 1 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Richard H. Austing at telephone (301)985-7008. The best time to call is Tuesday & Thursday.

CAPP 401 Concepts in Ada

The ***objective*** is to familiarize competent users of Pascal (or similar languages) with Ada features essential for study of advanced features in CAPP 405.

The course is ***oriented*** toward technical overview and technical programming. The Ada ***concepts*** covered include exception handling, generics, packages and abstract data types. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes prog. exp. The course ***materials*** include the text Programming in Ada by Barnes (this textbook is not provided). The VAX 11/780 ***computer*** running VAX/VMS-4 and the Digital Ada Version 1 ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: Univ. of Maryland University College
University Blvd. at Adelphi Road
College Park, MD 20742

Instructor(s)
Dr. Helmut Theiss

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site and various locations. This course is part 2 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Richard H. Austing at telephone (301)985-7008. The best time to call is Tuesday & Thursday.

CAPP 405 Applying Advanced Features in Ada

The ***objective*** is to provide the tools to produce software designs or programs using data structures Ada, and the techniques of parallel or concurrent processing.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include parallel processing, data structures, tasking and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include the text Parallel Programming in ANSI Standard Ada by Cherry, as well as Data Structures with Ada by Feldman. The VAX 11/780 ***computer*** running VMS-4 and the Digital, Version 1 ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: Univ. of Maryland University College
University Blvd. at Adelphi Road
College Park, MD 20742

Instructor(s)
Steven Deller

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site and various locations. This course is part 3 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Richard H. Austing at telephone (301)985-7008. The best time to call is Tuesday & Thursday.

Univ. of Maryland University College

Ada Fundamentals Training Program

The ***objective*** is to demonstrate the efficiency, reliability and portability of Ada and to gain experience in writing, testing, and modifying Ada Programs.

The course is ***oriented*** toward design concepts, management overview and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts and programmers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Reference for the Ada Progamming Language (this textbook is not provided). The VAX 11/780 ***computer*** running VMS Ver. 4 and the Digital VAX ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include company employees, government personnel and graduate students.

Name and Address of offeror: Univ. of Maryland University College
The Conferences and Institutes Program
University Blvd. at Adelphi Road
College Park, Maryland 20742-1668

Offeror's Background:
The program is conducted by Teledyne Brown Engineering Staff. Thomas E. Kirchgessner, Ph.D. Senior Systems Analyst & Ada Program Mgr. for the Washington office of Teledyne Brown Engineering. Sylvia M. Poole, B.S. Programmer/Analyst for Washington Office of Teledyne Brown. Paul L. Lewis, M.S., Principal Systems Analyst in the Washington Program Office of TBE.

Instructor(s)
Dr. Thomas E. Kirchgessner, Ph.D., Sr. Syst. Analyst & Ada Prog. Mgr
Sylvia M. Poole, B.S. Programmer/Analyst
Paul L. Lewis, M.S., Principal Systems Analyst

Pricing information: $1500. This course is ***scheduled*** at specific times and dates. The course is taught at various locations. ***Available:*** 1/86. For further information ***contact*** John Lathrop at telephone (301)985-7195. The best time to call is 9am-4pm EST.

Offeror's Comments :
Courses are offered once a month, January thru June 1986. Lodging is available at The Center of Adult Education by calling (301)985-7303. To receive a course brochure, call (301) 985-7157. Class size limited to 20 participants. 50% of class is hands on.

Advanced Programming Language Concepts

The ***objective*** is to survey advanced language issues.

The course is ***oriented*** toward technical overview. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. Programming ***background*** required includes FORTRAN, LISP, assembly and Pascal. The course ***materials*** include current papers from the literature. The VAX 11/750 ***computer*** running UNIX will be used. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: Michigan Technological University
Computer Science
Houghton, MI 49931

Offeror's Background:
One of the twelve largest U. S. universities in terms of undergraduate engineering enrollments. Strong programs in computer science (BSCS and MSCS) with over 450 undergraduates and 15 graduate students.

Instructor(s)
Dr. John Lowther, Ph.D Computer Science

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 10 weeks. ***Available:*** 12/86. For further information ***contact*** Dr. John Lowther at telephone (906)487-2183.

Software Engineering with Ada

The ***objective*** is to teach s/w eng. by presenting the features of the Ada language in light of particular problems. The Ada solution is contrasted with conventional languages.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include relationship to APSE, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes Computer Science graduate students. Programming ***background*** required includes 2 HOLs. The course ***materials*** include the text Software Engineering with Ada by Booch, as well as Ada Language Reference Manual and lecture notes. The DG MV10000 ***computer*** running AOS and the DG ADE ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include full-time students, graduate students and part-time students.

Name and Address of offeror: University of Minnesota
Computer Science Department
207 Church St, SE, 136 Lind Hall
Minneapolis, MN 55455

Offeror's Background:
Dr. Paul Stachour has 10 years design/implementation experience in a variety of languages and systems. He has been active in the Ada language before GREEN. He is the joint author of an Ada textbook intended for selflearning of Ada.

Instructor(s)
Dr. Paul Stachour, Ph.D CS

Pricing information: university credit fees. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** David W. Fox at telephone (612)373-0133. The best time to call is 8:00-4:30 CST.

Offeror's Comments :
This class is taught as a portion of a graduate-level (MS/PhD) program in Computer Science. This course a 10 week course, 3 hours per week. Required Programming Background: 1) at least two high-order languages, 2) a programming languages class, and 3) two years programming experience.

Programmation 2

The *objective* is to teach software engineering techniques using Ada as a vehicle of expression.

The course is *oriented* toward software engineering methodologies, technical overview and technical programming. The Ada *concepts* covered include exception handling, strong data typing, packages and abstract data types. The *audience* this course is intended for includes novices. Programming *background* required includes Pascal. The course *materials* include the text Understanding Ada by Bray, Pokrass. The VAX/780 *computer* running VMS 4.1 will be used. Students receive *hands-on* experience with the Ada language. The type of *organization* offering the course is an educational institution. Individuals *eligible* to attend the course include undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: Universite de Montreal
Dept.d'informatique et de rech. oper.
CP 6128, Succ. A. Montreal, PQ Canada
H3C 3J7

Instructor(s)
Guy Lapalme

Pricing information is available on request. This course is *scheduled* at specific times and dates. The course is taught at offering organization's site. *Available:* now. For further information *contact* Guy Lapalme at telephone (514)343-7220.

Universite de Montreal

Software Engineering Using Ada

The ***objective*** is to give a complete overview and hands-on experience in the Ada language, developing software engineering and design techniques.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes computer science majors, programmers and engineers. Programming ***background*** required includes Pascal. The course ***materials*** include the text An Introduction to Ada by S. J. Young, as well as Ada Language Reference Manual and lecture notes. The VAX 11/780 ***computer*** running VMS and the Ada/ED Version 1.5 ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: North Carolina A & T State University
Department of Math & Computer Science
Attn: Dr. Robert C. Mers
Greensboro, NC 27411

Offeror's Background:
Graduate of the Ada Enhancement Program sponsored by US Army CENTACS, Ft. Monmouth, NJ, 1983. Active in Ada course development, paper "Experiences of Pascal Trained Students in an Introductory Ada Course" accepted by the Fourth Annual Conference on Ada Technology, Graduate of IFRICS (Institute for Retraining in Computer Science), 1984.

Instructor(s)
Dr. Robert C. Mers, PhD, Computer Science

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 45 days. ***Available:*** now. For further information ***contact*** Dr. Robert C. Mers at telephone (919)379-7823. The best time to call is MWF 9-11,1-2; Tues. PM; Thurs. AM.

Offeror's Comments :
This course is an elective for Computer Science and Engineering majors and is designed to give students the background needed to work in an Ada language and Software Engineering environment. Background needed is two semesters of Pascal or equivalent. Emphasis will be on the non-Pascal and software engineering aspects of Ada.

Ada Projects

The ***objective*** is to teach the use of Ada in developing software projects.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is concurrent programming. The ***audience*** this course is intended for includes graduate students, analysts and programmers. Programming ***background*** required includes Pascal. The course ***materials*** include the text Ada for Experienced Programmers by Habermann and Perry, as well as lecture notes. The Micro VAX-II ***computer*** running Ultrix and the Verdix Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include full-time students, graduate students and part-time students.

Name and Address of offeror: North Carolina State University
Dept. of Computer Science
Box 8206
Raleigh, NC 27695-8206

Offeror's Background:
Dr. Tai has taught courses and performed research in the areas of compiler construction, programming languages, and software engineering. Currently, he is working on the testing of concurrent Ada programs.

Instructor(s)
Dr. K.C. Tai, PhD

Pricing information: available upon request. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** Dr. K.C. Tai at telephone (919)737-7862. The best time to call is afternoon.

North Carolina State University

The Ada Programming Language

The ***objective*** is to introduce the Ada language.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and technical programming. The Ada ***concepts*** covered include exception handling. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes FORTRAN, PL/1, ALGOL and Pascal. The course ***materials*** include the text Programming in Ada by J.G.P. Barnes, as well as lecture notes. The VAX-11/780 ***computer*** running VMS and the Ada Ed ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include full-time students, graduate students and general public.

Name and Address of offeror: Northeastern University
370 Common Street
Dedham, MA 02026

Offeror's Background:
Northeastern University has a reputation for graduating "working" students, due to its pioneering efforts in cooperative education. This reputation is enhanced by Northeastern's commitment to continuing education. Curriculum Development and the offering of courses in the Ada language have a high priority at Northeastern.

Instructor(s)
Charlene R. Hayden, A.B. Math/Computer Science

Pricing information is available on request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site and various locations. The ***length*** of course is 22 hours. ***Available:*** now. For further information ***contact*** Charlene Roberts Hayden at telephone (617)449-2000. The best time to call is 8:00am-4:30pm EST.

Offeror's Comments :
This course has been offered successfully twice at Northeastern's Dedham and Waltham campuses.

An Introduction to the Ada Programming Language
(COMP 408)

The ***objective*** is to cover all Ada features (except low-level I/O) and use them (except tasks) in programming assignments; emphasis on appropriate design methodologies.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes Non-novice students, analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text An Introduction to Ada by S. J. Young, as well as Understanding Ada, Ada Language Reference Manual and lecture notes. The Data General Eclipse ***computer*** running MV/10000-A and the ROLM/Data General ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Pennsylvania State University
Math & Computer Science Dept.
Capitol Campus
Middletown, PA 17057

Offeror's Background:
Penn State/Capitol Campus offers a wide variety of Computer Science courses including Introductory Ada, Advanced Ada and Software Design.

Instructor(s)
Dr. M. Susan Richman, PhD, Mathematics

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site and customer's site. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Dr. M. Susan Richman at telephone (717)948-6082. The best time to call is 8:00 - 5:00 EST.

Offeror's Comments :
The courses emphasize using Ada with appropriate methodologies, taking full advantage of packages, separate compilation and abstraction. We prefer to offer the course over a lengthy period to allow for extensive hands-on experience.

Comp 409 - Advanced Ada

The ***objective*** is to emphasize exceptions, generic units and concurrent processing.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include lecture notes. The Data General Eclipse ***computer*** running AOS/VS and the ROLM ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Pennsylvania State University
Math & Computer Science Dept.
Penn. State U., Capitol Campus
Middletown, Pennsylvania 17057

Offeror's Background:
Penn State/Capitol Campus offers a wide variety of Computer Science courses including Introductory Ada, Advanced Ada and Software Design.

Instructor(s)
Dr. M. Susan Richman, PhD, Mathematics

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site and customer's site. This course is part 2 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Dr. M. Susan Richman at telephone (717)948-6082. The best time to call is 8:00 - 5:00 EST.

Offeror's Comments :
The courses emphasize using Ada with appropriate methodologies, taking full advantage of packages, separate compilation and abstraction. We prefer to offer the course over a lengthy period to allow for extensive hands-on experience.

Introduction to Ada (PDP 499)

The ***objective*** is to introduce the Ada language at the level necessary for developing applications programs.

The course is ***oriented*** toward technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes students. Programming ***background*** required includes FORTRAN. The course ***materials*** include the text Ada, an Advanced Introduction by Gehani, as well as lecture notes. The VAX-11/750 ***computer*** running VMS and the NYU Ada/Ed ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: University of Southern California
Programming and Data Processing Dept.
University Park
Los Angeles, CA 90089

Offeror's Background:
The offeror has been engaged in software engineering and computer- related research for 30 years. At this time, 30 faculty members are supervising 600 Master's students and 100 PhD students.

Instructor(s)
George O. Petrovay, M.S.C.S. (Loyola Marymount University)

Pricing information: $480. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** George O. Petrovay at telephone (213)616-2620. The best time to call is 8:00am-5:00pm PST.

Special Topics in Languages

The ***objective*** is to present a comparative survey of recent high level languages and their facilities. Requires the implementation of a software project in Ada.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes graduate students, analysts, programmers and engineers. Programming ***background*** required includes Survey/Ada. The course ***materials*** include Ada Language Reference Manual. The DEC VAX-11/750, MV 1 ***computer*** running VMS, AOSVS and the NYU ADA/ED, TeleSoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Texas A&M University
Dept. of Computer Science
College Station, Texas 77843

Offeror's Background:
Offeror is an educational institution. The Laboratory for Software Research associated with the department has been involved in software engineering and high level language research (particularly with Ada) for the last four years.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 15 weeks. ***Available:*** now. For further information ***contact*** Dr. Sallie Sheppard at telephone (409)845-5446.

Offeror's Comments :
This course is one of three courses which will lead to a specialty in Ada and Software Engineering. These courses can be taken as part of the Masters or PhD programs at Texas A&M University.

Programming Language Design

The ***objective*** is to teach the use of Ada as an example of design principles and their implementation.

The course is ***oriented*** toward design concepts and technical overview. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes C, FORTRAN, LISP and Pascal. The course ***materials*** include Ada Language Reference Manual. The DG MV10000 ***computer*** running AOS/VS and the DG ADA ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Texas A&M University
Department of Computer Science
College Station, Texas 77843-3112

Offeror's Background:
Offeror is an educational institution. The Laboratory for Software Research associated with the department has been involved in software engineering and high level language research (particularly with Ada) for the last four years.

Pricing information: available upon request. This course is ***scheduled*** periodically, based on demand. The ***length*** of course is 15 weeks. For further information ***contact*** Dr. Sallie Sheppard at telephone (409)845-5466.

Offeror's Comments :
This course provides undergraduate students the opportunity to study Ada with hands on experience. The course may also be taken for graduate credit.

Programming Methodology

The ***objective*** is to present methodology and techniques involved in the design, production and maintenance of software systems.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview and programming support environments. The Ada ***concepts*** covered include strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes graduate students, analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Structured Design by Constantine. The DEC VAX 11/750 ***computer*** running VMS and the DEC ADA ***compiler*** will be used. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include company employees, government personnel, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Texas A&M University
Dept. of Computer Science
College Station, Texas 77843

Offeror's Background:
Offeror is an educational institution. The Laboratory for Software Research associated with the department has been involved in software engineering and high level language research (particularly with Ada) for the last 4 years.

Instructor(s)
Dr. Dick Simmon, PhD, C.S.

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 15 weeks. This course is part 1 in a ***series*** of 3. ***Available:*** now. For further information ***contact*** Dr. Sallie Sheppard at telephone (409)845-5466.

Offeror's Comments :
This course is one of three courses which will lead to a specialty in Ada and Software Engineering. These courses can be taken as part of the Masters or PhD programs at Texas A&M University .

Survey of Programming Languages CS611

The ***objective*** is to present an overview of high level language concepts emphasizing generics, concurrency control and exception handling, w/Ada as modern PL case.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include language concepts relationships, real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes graduate students, analysts, programmers and engineers. Programming ***background*** required includes 2 PLs. The course ***materials*** include the text Software Engineering & Ada by Grady Booch. The DEC VAX 11/750 ***computer*** running VMS and the DEC ADA ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Texas A&M University
Dept. of Computer Science
College Station, Texas 77843

Offeror's Background:
Offeror is an educational institution. The Laboratory for Software Research associated with the department has been involved in software engineering and high level language research (particularly with Ada) for the last four years.

Instructor(s)
Dr. Sallie Sheppard, Ph.D
Dr. Don Draw, Ph.D
Dr. Homer Carlisle, Ph.D

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates and as customer determines. The course is taught at offering organization's site. The ***length*** of course is 15 weeks. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** Dr. Sallie Sheppard at telephone (409)845-5466.

Offeror's Comments :
This course is one of three courses which will lead to a specialty in Ada and Software Engineering. These courses can be taken part of the Masters or PhD programs at Texas A&M University.

Texas A&M University

Embedded Programming in Ada

The ***objective*** is to provide the student with an understanding of programming in and the use of the Ada language particularly in embedded environment.

The course is ***oriented*** toward software engineering methodologies, technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is embedded systems (general). The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Pascal. The IBM 4341 ***computer*** running VM/CMS and the Telesoft-Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: The University of West Florida
Systems Science Department
Pensacola, FL 32514

Offeror's Background:
The Systems Science Dept. at UWF has been producing computer professionals since 1967. Both Bachelors & Masters degrees are offered. The Ada language course has been taught since 1983.

Instructor(s)
T. F. Elbert, Ph.D./EE, M.A. Applied Math

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** Dr. T. F. Elbert at telephone (904)474-1549. The best time to call is 8:00AM-4:30PM EST.

Offeror's Comments :
This course is an elective available to Systems Science majors and other computer professionals. It is taught at the Senior/First Year Graduate Level.

Ada Programming

The ***objective*** is to give students a fair knowledge of the Ada programming language with emphasis on large software development.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes Pascal. The course ***materials*** include the text Programming in Ada by Weiner & Sincovec, as well as lecture notes. The VAX-11/780 ***computer*** running VMS and the VAX ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Tuskegee Institute
Dept. of Computer Science
Tuskegee Institute, AL 36088
Attn: H.N. Narang

Offeror's Background:
In addition to computer programming teaching experience including Pascal, I took a course in the Ada language this Summer offered by the Department of Defense through SCEE at Tuskegee Institute.

Instructor(s)
H.N. Narang, Ph.D. Math; M.S. C.S.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. This course is part of a ***series***. ***Available:*** now. For further information ***contact*** H.N. Narang at telephone (205)727-8593. The best time to call is 9:00am-5:00pm.

Tuskegee Institute

Ada Summer Workshop

The ***objective*** is to provide an in-depth overview of the Ada programming language to experienced programmers.

The course is ***oriented*** toward design concepts, technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programming instructors. Programming ***background*** required includes experience in any high order language. The course ***materials*** include the text Programming in Ada by Barnes, as well as Ada Language Reference Manual and lecture notes. The VAX 11/780 ***computer*** running VMS and the VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include government personnel and undergraduates.

Name and Address of offeror: U.S. Military Academy
Dept. of Geography and Computer Science
ATTN: MAJ Engle
West Point, NY 10996

Offeror's Background:
This course has been offered since 1979 as an elective course to Computer Science Majors at this institution. Instructor has a Master of Science in Computer Science from Stanford University and has been involved in Ada education since 1983.

Instructor(s)
MAJ Charles Engle, M.S., Computer Science
MAJ Colen Willis, M.S., Computer Science

Pricing information: course is free of charge. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 10 days. ***Available:*** now. For further information ***contact*** MAJ Charles Engle at telephone (914)938-3691 or at Autovon 688-3691. The best time to call is 0730-1630 (EST).

Offeror's Comments :
This course is given by invitation only and is free of charge to the participants except for travel and TDY expenses. Instructor is a member of IEEE-CS, SIGAda and the DoD Ada Software Engineering Education and Training Team as well as the Human Resources Area Coordination Team of STARS. Instructor is also a member of SIGSOFT, SIGCSE and SIGPlan.

Ada Concepts and Programming

The ***objective*** is to teach Ada concepts with practical programming examples to supplement instruction.

The course is ***oriented*** toward software engineering methodologies, design concepts and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes Comp. Sci. Majors (undergrad. seniors). Programming ***background*** required includes Pascal. The course ***materials*** include the text Programming in Ada by Barnes (this textbook is not provided), as well as lecture notes. The VAX 11/780 ***computer*** running VMS and the VAX Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include undergraduates.

Name and Address of offeror: U.S. Military Academy
Dept. of Geography and Computer Science
ATTN: MAJ Engle
West Point, NY 10996

Offeror's Background:
This course has been offered since 1979 as an elective course to Computer Science Majors at this institution. Instructor has a Master of Science in Computer Science from Stanford University and has been involved in Ada education since 1983.

Instructor(s)
MAJ Charles Engle, M.S., Computer Science
MAJ Colen Willis, M.S., Computer Science

Pricing information is available on request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** now. For further information ***contact*** MAJ Charles Engle at telephone (914)938-3691 or at Autovon 688-3691. The best time to call is 0730-1630 (EST).

Offeror's Comments :
Instructor is a member of IEEE-CS, SIGAda and the DoD Ada Software Engineering Education and Training Team as well as the Human Resources Area Coordination Team of STARS. The instructor is also a member of SIGSOFT, SIGCSE and SIGPlan.

Introduction to Ada and Software Engineering

The ***objective*** is to teach Ada programming with an emphasis on software engineering.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes Pascal. The course ***materials*** include the text Ada for Experienced Programmers by A.N. Habermann, as well as Programming in Ada by J.G.P. Barnes. The VAX-11/780 ***computer*** running VMS and the Telesoft Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a professional society. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students and part-time students.

Name and Address of offeror: Virginia Technical Institute
Computer Science Dept.
2990 Telestar Ct.
Falls Church, VA 22044

Offeror's Background:
Instructor is principal consultant (Ada) at Systems Designers International in Falls Church and is Associate Professor of Computer Science at Virginia Tech in Falls Church. Member of ACM, SigAda.

Instructor(s)
Dr. Mahmoud Parsian, Computer Scientist & Assoc. Prof.

Pricing information is available on request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. ***Available:*** 3/86. For further information ***contact*** Dr. Mahmoud Parsian at telephone (703)827-9519. . The best time to call is 9:00AM-4:00PM EST.

Offeror's Comments :
Programming is taught using the Ada language with an emphasis on software engineering concepts.

Software Engineering

The ***objective*** is to learn and apply the methods and techniques of software development that will result in reliable, understandable, and maintainable software.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes programmers. Programming ***background*** required includes Pascal. The course ***materials*** include Ada Language Reference Manual. The VAX/11-780 ***computer*** running VMS and the Telesoft ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: University of Wisconsin-Stout
Mathematics Dept.
Menomonie, WI 54751

Offeror's Background:
Instructor has 2 yrs. experience teaching course and 3 yrs. experience as a professional programmer. Member ACM SIGAda (national) & member of ACM SIGAda (Twin Cities Chapter).

Pricing information: available upon request. This course is ***scheduled*** at specific times and dates. The course is taught at offering organization's site. The ***length*** of course is 50 days. ***Available:*** now. For further information ***contact*** Bruce W. Johnston at telephone (715)232-1492. The best time to call is Tuesday or Thursday 10-12.

Programming in Ada

The ***objective*** is to enable participants to understand the principles of Ada programming and features which encourage good practice in Ada program design and construction.

The course is ***oriented*** toward technical overview and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes experience in any high order language such as: Coral, FORTRAN, ALGOL and Pascal. The course ***materials*** include the text Programming in Ada by J. G. P. Barnes, as well as lecture notes. The DEC VAX-11 ***computer*** running UNIX and the York Ada ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: The University of York
Dept. of Computer Science
Software Technology Research Center
Heslington, York Y01 5DD UK

Offeror's Background:
The Software Technology Research Centre of the University of York has been involved in Ada Compiler developments, Ada training & consultancy since 1980. Current research interests include Intergrated Project Support Environments in addition to its interest in Ada.

Instructor(s)
Dr. I. C. Wand, Ph.D., Physics
Dr. K. C. Mander, Ph.D., Computer Science
Dr. A. J. Wellings, Ph.D., Computer Science

Pricing information: available upon request This course is ***scheduled*** as customer determines and periodically, based on demand. The course is taught at offering organization's site and customer's site. The ***length*** of course is 5 days. ***Available:*** now. For further information ***contact*** Dr. K. C. Mander at telephone 090459861x357.

2.3. Videotape Courses

2.3.1. Company Offerings

Course listings start on the next page.

Ada Series I "Fundamentals of Ada Programming"

The ***objective*** is to introduce all aspects of programming constructs and tools, use of algorithms, data types, and style; present syntax and semantics of the Ada language.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes data processing, novices, analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include MIL/ANSI Standard for the Ada Language and a study guide. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Ada Vision, Inc.
380 Neff Road
Detroit, MI 48230-1645

Offeror's Background:
Ada Vision, Inc. has been 4 years in preparation of Ada Series I on videotape. This 16 hour course leads into the Series II advanced course. Interactive video courseware is nearing completion as well as keyed linear videotape. Embedded chip development to Mil Standards in the Ada language will be a near term future capability.

Instructor(s)
Dr. Joseph T. Ryan, Chief Scientist, USAF Europe

Pricing information: Ada Series I: $4800. Additional copies are available, and lease terms are available on request. This videotape course offers question & answer sessions and is available on VHS, beta and 3/4 inch. There are a total of 16 tapes with a total running time of 13 hours and 50 minutes. The ***length*** of course is 13 hours. This course is part 1 in a ***series*** of 2. ***Available:*** now. For further information ***contact*** Prof. Eliot Peck at telephone (313)882-9500.

Offeror's Comments :
The only equipment required to take the course is a simple videocassette recorder playing any format. The course can be taken at any time; in plant, or even at home after working hours, on a home VCR. Separate quiz/test tape available for Ada series I linear course. Interactive course presents frequent automatic quizzing with automatic, detailed recording of student performance.

Microcomputer Based Ada Training and Programming

The ***objective*** is AdaVision's systems permit hands-on Ada training and programming via Ada compilers resident in a series of increasingly advanced micro-computers.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes data processors, novices, analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include System User's Guide and Handbook. The MS/DOS Micro ***computer*** running MS/DOS and the RR Software ***compiler*** will be used. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include general public.

Name and Address of offeror: AdaVision, Inc.
380 Neff Road
Detroit, MI 48230-1645

Offeror's Background:
AdaVision, Inc. has been involved for 5 years in the production of video- based, self-paced training materials for the Ada Programming Language.

Instructor(s)
Dr. Joseph T. Ryan, Chief Scientist, USAF, Europe

Pricing information: system prices start at $3995. This videotape course is available on VHS, beta and 3/4 inch. This course is ***scheduled*** as customer determines. The course is taught at customer's site. This course is part of a ***series***. ***Available:*** 2/86. For further information ***contact*** Eliot S. Peck or G. Michael Gallagher at telephone (313)882-9500.

Offeror's Comments :
The VISION* Ada/Microcomputer series can be used alone, or in with the AdaVision Series I Videocourse (Fundamentals of Ada Programming), 16 lessons, totalling 13 hours, also described in this catalog). A substantial discount is allowed when any of the VISION* Ada/Micro configurations are purchased along with the AdaVision Series I Videocourse. Also currently under development are CAI based versions of this Videocourse, which will run on most MS/DOS micros.

Ada Series II "Advanced Ada Programming"
Videotape Course

The ***objective*** is to give an overview of data typing, expressions of the Ada language and design of a large system using the Ada language and review of Ada concepts.

The course is ***oriented*** toward software engineering methodologies, design concepts, management overview, technical overview, management programming, technical programming and programming support environments. The Ada ***concepts*** covered include real-time programming, exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***application area*** emphasized is advanced Ada programming. The ***audience*** this course is intended for includes data processing, analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes Ada. The course ***materials*** include MIL/ANSI Standard for the Ada language, and a study guide. The type of ***organization*** offering the course is a company.

Name and Address of offeror: Ada Vision, Inc.
380 Neff Road
Detroit, MI 48230-1645

Offeror's Background:
Ada Vision, Inc. has been 4 years in preparation of Ada Series II on videotape. This 24 hour course will continue from where our Ada Series I course left off, but can be used separately by programmers with background in the Ada language fundamentals. Keyed linear and interactive versions of Ada Series II are in preparation.

Instructor(s)
Dr. Joseph T. Ryan, Chief Scientist, USAF Europe

Pricing information: $5200; additional copies area available at a substantial discount. This videotape course offers question & answer sessions and is available on VHS, beta and 3/4 inch. There are a total of 24 tapes with a total running time of 20 hours. The ***length*** of course is 20 hours. This course is part 2 in a ***series*** of 2. ***Available:*** 6/86. For further information ***contact*** Prof. Eliot Peck at telephone (313)882-9500.

Offeror's Comments :
There are a total of 24 tapes (50 minutes each in length). Ada Series II will essentially complete our presentation of the Ada programming language in the video courseware training format. Ada-Vision, Inc. Series I and II constitute an absolutely comprehensive treatment of the Ada language, and are by far the most cost effective training method available for the Ada programming language.

ICHBIAH, BARNES and FIRTH on Ada

The ***objective*** is to introduce Ada programming concepts.

The course is ***oriented*** toward design concepts, management overview and technical overview. The Ada ***concepts*** covered include visibility, exception handling, strong data typing, tasking and packages. The ***audience*** this course is intended for includes course developers, novices, analysts, program managers, programmers and technical managers. Programming ***background*** required includes experience in any high order language. The course ***materials*** include transcripts and lecture notes. The type of ***organization*** offering the course is a company. Individuals ***eligible*** to attend the course include company employees, government personnel, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Alsys, Inc.
1432 Main Street
Waltham, MA 02154
In Other Countries see Offeror's Comment

Offeror's Background:
Parent company, Alsys S.A. founded in France by the principal designer of the Ada language, Jean Ichbiah. Alsys S.A. wrote the Ada standard. Eight Alsys employees have received DoD certificates for their contributions to Ada.

Instructor(s)
Jean D. Ichbiah, Principal Designer of the Ada Language
Robert Firth, Key-member of the Ada Language Team
John Barnes, Key-member of the Ada Language Team

Pricing information: $6000 for 1 course; discounts available for quantity purchases. This videotape course is available on VHS, beta and 3/4 inch. There are a total of 26 tapes. This course is ***scheduled*** at specific times and dates, as customer determines and periodically, based on demand. The course is taught at offering organization's site, customer's site and various locations. ***Available:*** now. For further information ***contact*** Marketing Department at telephone (617)890-0030. The best time to call is 9:00-5:30 Mon-Fri.

Offeror's Comments :
Twenty-six subject-oriented, instructional Video Cassettes on the concepts, techniques, innovations and impact of Ada. Subjects covered include program structure, system-dependent programming, tasking, visibility, packages, numeric types, access types, exceptions, etc. Seminar on tape led by Dr. Jean Ichbiah, assisted by Mr. John Barnes and Dr. Robert Firth, key members of the Ada language design team.

Alsys, Inc.

2.3.2. Government Agency Offerings

Course listings start on the next page.

Ada Programming Language

The ***objective*** is to communicate the essence of the Ada language and develop confidence in using the Ada language effectively.

The course is ***oriented*** toward software engineering methodologies, design concepts, technical overview and technical programming. The Ada ***concepts*** covered include exception handling, generics, strong data typing, tasking, packages, abstract data types and problem solving. The ***audience*** this course is intended for includes analysts, programmers and engineers. Programming ***background*** required includes FORTRAN. The course ***materials*** include ANSI/MIL-STD-1815A(22Jan83) and lecture notes. The Data General MV-4000 ***computer*** and the ROLM ***compiler*** will be used. The type of ***organization*** offering the course is a government agency.

Name and Address of offeror: U.S. Army Materiel Systems
Herbert E. Cohen
Attn: AMXSY-MP
Aberdeen Proving Ground, MD 21005-5071

Offeror's Background:
Organized short video taped courses in mathematics and directed systems/software teams while associated with CVDC and CSC.

Instructor(s)
William Carlson, BSEE, MS Director

Pricing information is available on request. This videotape course offers question & answer sessions as well as assignments and is available on VHS, beta and 3/4 inch. There are a total of 15 tapes with a total running time of 9 hours. The ***length*** of course is 9 hours. For further information ***contact*** Herbert E. Cohen at telephone (301)278-6597 or at Autovon 283-6597. The best time to call is 10:00 AM.

Offeror's Comments :
DoD organizations can obtain free copies of tapes and text by writing to: Department of Army - Joint Visual Information Activity - Attn: ASNV-O-CM -Tobyhanna Army Depot - Tobyhanna, PA 18466-5102. Others can obtain the tapes from the National Audio Visual Center, GSA, Attn: Order Section, Washington, DC 20409 for a cost of $995.00 under accession number A11-957.

2.3.3. University Offerings

Course listings start on the next page.

Ada Programming Language

The ***objective*** is to teach you how to use Ada. It is structured for fast, easy learning. It is easy to understand and illustrates the important feaures of Ada.

The course is ***oriented*** toward management overview, technical overview, management programming, technical programming and programming support environments. The ***audience*** this course is intended for includes novices, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include a study guide. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Association for Media-Based Continuing
Education for Engineers
225 North Ave., NW
Atlanta, GA 30332

Offeror's Background:
Tape is produced by the Engineering School of Colorado State University.

Pricing information: rental $1550 if no tape is kept over 4 weeks; $3100 if no tape is kept over 12 weeks, purchase $5235. This videotape course is available on VHS, beta and 3/4 inch. There are a total of 10 tapes with a total running time of 5 hours. The ***length*** of course is 4 weeks or 5 hours. For further information ***contact*** Carol Buterbaugh at telephone (404)894-3362. The best time to call is 8:30-5.

Ada

The ***objective*** is to provide an in-depth introduction to the facilities available in the Ada programming language.

The course is ***oriented*** toward management overview, technical overview, management programming and technical programming. The Ada ***concepts*** covered include overview of I/O, real-time programming, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***application area*** emphasized is general overview. The ***audience*** this course is intended for includes novices, analysts, program managers, programmers, technical managers and engineers. Programming ***background*** required includes FORTRAN, PL/1, ALGOL and Pascal. The course ***materials*** include a study guide. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Colorado State University
Engr. Renewal & Growth
Fort Collins, CO 80523
Attn: Director

Offeror's Background:
This course is presented by Prof. Richard Fairley. Prof. Fairley is well known in the software engineering field, and regularly teaches courses in Ada and software engineering.

Instructor(s)
Prof. Richard Fairley, PhD. Computer Science

Pricing information: available upon request. This videotape course offers assignments and is available on VHS, beta and 3/4 inch. There are a total of 10 tapes with a total running time of 5 hours. The ***length*** of course is 5 hours. ***Available:*** now. For further information ***contact*** Director, ERG Colo. State U. at telephone (800)525-4950. The best time to call is 8-5 MST.

Offeror's Comments :
The CSU program is among the nation's top ten in continuing education. It has provided videotaped courses on diverse subjects to employees in industry and government for over fifteen years.

Software Engineering...A First Course

The ***objective*** is to introduce fundamental concepts, tools, and techniques of S/W engineering and suggest how these techniques can be introduced into an organization.

The course is ***oriented*** toward software engineering methodologies and design concepts. The Ada ***concepts*** covered include packages and problem solving. The ***application area*** emphasized is software analysis. The ***audience*** this course is intended for includes analysts, program managers, programmers, technical managers and engineers. No programming ***background*** is required. The course ***materials*** include lecture notes. The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: Colorado State University
Telecommunications Extended Studies
Engineering Research Center
Fort Collins, CO 80523

Offeror's Background:
The CSU College of Engineering is among the nation's top ten in continuing education. It has provided videotape courses for over 15 years. The instructor, Prof. Fairley, has lectured widely on various software engineering topics, including the Ada language and Ada Programming Support Environments, and has 10 years of teaching experience.

Instructor(s)
Prof. Richard Fairley, Ph.D Computer Science

Pricing information is available on request. This videotape course is available on VHS, beta and 3/4 inch. There are a total of 20 tapes with a total running time of 10 hours. The ***length*** of course is 10 hours. For further information ***contact*** Marcia Bankirer, Director at telephone (800)525-4950. The best time to call is 8:00-5:00 MST.

Offeror's Comments :
Individual tapes or entire course available for purchase or lease. Leased tapes may be scheduled per customer requirements. Each participant should have own copy of lecture notes. Programming exercises are included in each lecture.

The Ada Programming Language

The ***objective*** is to cover both the high level concepts that support general purpose programming and the special constructs for embedded real-time systems.

The course is ***oriented*** toward software engineering methodologies, management overview, technical overview, technical programming and programming support environments. The Ada ***concepts*** covered include a comprehensive overview of entire lang., real-time programming, exception handling, generics, strong data typing, tasking, packages and abstract data types. The ***audience*** this course is intended for includes analysts, programmers, technical managers and engineers. Programming ***background*** required includes Pascal. The course ***materials*** include lecture notes. Students receive ***hands-on*** experience with the Ada language. The type of ***organization*** offering the course is an educational institution. Individuals ***eligible*** to attend the course include company employees, government personnel, undergraduates, full-time students, graduate students, part-time students and general public.

Name and Address of offeror: Colorado State University
Engineering Renewal & Growth Program
Christman Field, Bldg. 1000
Fort Collins, CO 80523

Offeror's Background:
The CSU College of Engineering is among the nation's top ten in continuing education. It has provided videotape courses for over 15 years. The instructor Prof. Fairley, has lectured widely on various software engineering topics, including Ada and Ada Programming Support Environments. Prof Fairley has 10 yrs. teaching experience.

Instructor(s)
Prof. Richard Fairley, PhD Computer Science

Pricing information is available on request. This videotape course is available on VHS, beta and 3/4 inch. This course is ***scheduled*** as customer determines. The course is taught at offering organization's site, customer's site and various locations. The ***length*** of course is 5 hours. ***Available:*** now. For further information ***contact*** Slim Sommerville-Director ERG at CSU at telephone (800)525-4950. The best time to call is 9:00-5:00 MST.

Offeror's Comments :
Individual tapes or entire course available for purchase or lease. Leased tapes may be scheduled per customer requirements. Each participant should have own copy of lecture notes. Programming exercises are included in each lecture.

3. INFORMATIONAL RESOURCES

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Ada Letters

The type of ***organization*** offering the course is a professional society.

Name and Address of offeror: Association for Computing Machinery
11 West 42nd Street
New York, NY 10036

Pricing information: $30 annually. For further information ***contact*** Association for Computing Machinery at telephone (212)869-7440.

Offeror's Comments :
Ada Letters is the official bi-monthly technical publication of SIGAda. The basic annual subscription price is $15.00 for ACM members only. Subscription is included with membership dues for SIGAda.

Association for Computing Machinery

SIGAda

The type of ***organization*** offering the course is a professional society.

Name and Address of offeror: Association for Computing Machinery
11 West 42nd Street
New York, NY 10036

Pricing information: annual dues: $15 ACM members, $10 ACM student members, $32 non-members. For further information ***contact*** Association for Computing Machinery at telephone (212)869-7440.

Offeror's Comments :
Founded in 1947 as the society of computing community, the ACM is dedicated to the development of information processing as a discipline, and to the responsible use of computers in an increasing diversity of applications. SIGAda (formerly known as AdaTEC, the SIGPLAN Tech. Committee on Ada), founded in 1981 to serve the growing Ada community, is one of the 36 ACM Conferences. Its publication, "Ada Letters", is issued bimonthly.

U.S. Army Ada Training Curriculum

The type of ***organization*** offering the course is a government agency.

Name and Address of offeror: CENTACS/CECOM
Dept. of the Army, HQ US Army Communic.
Electronics Command and Fort Monmouth
Fort Monmouth, NJ 07703-5000

Offeror's Background:
Notes available: "Ada Technical Overview" (L102) AD A141862; "Introduction to Ada A Higher Order Language" (L103) AD A141848; "Ada For Software Managers" (L201) Volume I AD A142430, Volume II AD A142431; "Basic Ada Programming" (L202) Volume I AD A143584, Volume II AD A143585, Lab Manual and Exercises AD A143583; "Real-Time Concepts" (L303) AD A145093; "Advanced Ada Topics" (L305) Volume I AD A144498, Volume II AD A144499, Volume III AD A144500 and Exercises AD A144497.

Pricing information: available upon request. Available in hardcopy and microfiche. For further information ***contact*** CENTACS/CECOM at telephone (201)544-4280.

Offeror's Comments :
The documents are hardcopies of lecture notes with instructor notes used in the US Army Ada Training Curriculum. The documents are available from the Defense Technical Information Center (DTIC) and the National Technical Information Service (NTIS).The order numbers for the remaining courses are as follows: Real-Time Systems in Ada (L401) Volume I AD A146782, Volume II AD A146783; Using the Ada Language Reference Manual (L402) AD A143582.

CENTACS/CECOM

U.S. Army Ada Training Curriculum for Managers

The type of ***organization*** offering the course is a government agency.

Name and Address of offeror: CENTACS/CECOM
Dept. of the Army, HQ US Army Communic.
Electronics Command and Fort Monmouth
Fort Monmouth, NJ 07703-5000

Offeror's Background:
The documents are hardcopies of lecture notes with instructor notes used in the U.S. Army Ada Training Curriculum for Managers. The documents are available from the Defense Technical Information Center (DTIC) and the National Technical Information Service (NTIS) using the order numbers indicated in "Offeror's Comments" section on this page.

Pricing information: available upon request. Available in hardcopy and microfiche. For further information ***contact*** CENTACS/CECOM at telephone (201)544-4280.

Offeror's Comments :
"Software Engineering for Managers" (M101) Teacher's Guide AD A142432, Exercises AD A145094; "Introduction to Software Engineering" (M102) Teacher's Guide AD A144236, Exercises AD A144237;"Software Engineering Methodologies" (M201) Volume I AD A144256, Volume II AD A144257, Volume III AD A144258, Workbook AD A144240; "Programming Methodology" (M203) AD A143581.

Ada Bibliography: Volumes I & II

The type of ***organization*** offering the course is a government agency.

Name and Address of offeror: Data & Analysis Center for Software
RADC/COED
Griffiss AFB, NY 13441

Offeror's Background:
Volume II contains citations for documents pertaining to the history, development, progress and use of the Ada language. It also contains comprehensive author and subject indices which provide a cross reference to the appropriate document citation. The citations in this volume represent all documents added to the Ada Bibliographic Database since the publication of Volume I (DAN 4610) in May 1983.

Pricing information: Volume I: $30.00; Volume II: $20.00. For further information ***contact*** DACS at telephone (315)336-0937 or at Autovon 587-3395.

Offeror's Comments :
The Data & Analysis Center for Software (DACS) provided support to the AdaIC in the preparation of these bibliographies and is the authorized distributor. Volume II: DAN 6229; Volume I: DAN 4610.

The Infotrans Library, Inc.

The type of ***organization*** offering the course is a company.

Name and Address of offeror: Infotrans
27 Potter Pond
Lexington, MA 02173

Offeror's Background:
The Infotrans Library is an organization composed of cooperating member companies that have been brought together to service the needs of Ada users. The Infotrans Library (TILI) provides the following services: evaluation services, technology access, software access, customization and translation services, human resources, and education and training.

Pricing information: available upon request. For further information ***contact*** Infotrans at telephone (617)863-1212.

Offeror's Comments :
Upon favorable evaluation, a product may be catalogued and made available for purchase or time sharing through the Infotrans Library's electronic and physical distribution systems.

AD-A169 892 CATALOG OF RESOURCES FOR EDUCATION IN ADA (IRADE NAME) AND SOFTWARE ENGINEERING (CREASE) VERSION 4.0(U) IIT RESEARCH INST ROME NY MAY 86 MDA903-83-C-0306 3/4

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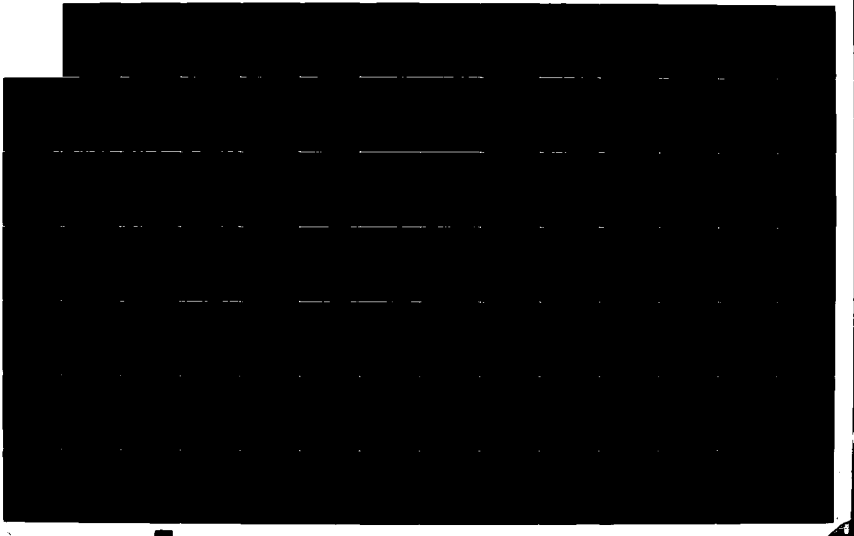

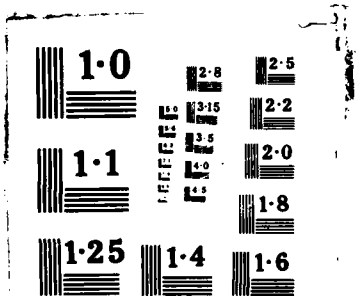
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Ada Data

The type of ***organization*** offering the course is a company.

Name and Address of offeror: International Resource Development, Inc.
Ada Data
6 Prowitt Street
Norwalk, CT 06855

Pricing information: $235 per year in U.S. $255 outside U.S. For further information ***contact*** Ken Bosomworth at telephone (203)866-7800.

Offeror's Comments :
Ada Data is a monthly newsletter covering market trends and commercial developments in Ada Software, services, and equipment. Its particular emphasis is in the interpretation of the commercial significance of new developments, both as they relate to opportunities within the Defense Department and in the area of commercial/industrial applications, training and ancillary services, etc.

Journal of Pascal, Ada & Modula-2

The type of ***organization*** offering the course is a company.

Name and Address of offeror: John Wiley & Sons, Inc.
1 Wiley Dr.
Somerset, NJ 08873

Offeror's Background:
A forum for peer-reviewed research articles on the theory and practice of Pascal, Ada & Modula-2, this journal examines such topics as software engineering, software environments, concurrency, graphics, operating systems, and embedded real-time systems.

Pricing information: $48 institutional; $20 individual. For further information ***contact*** John Wiley & Sons, Inc. at telephone (800)526-5368.

Ada Language Proficiency Test

The type of ***organization*** offering the course is a company.

Name and Address of offeror: Psychometrics, Inc.
2800 Olympic Boulevard
Suite 104
Santa Monica, CA 90404-4187

Pricing information: $55.00 per person for 60-item test; $35.00 for 30-item test. For further information ***contact*** Psychometrics, Inc. at telephone (213)829-0248.

Offeror's Comments :
There are two forms of the Ada test. The first is a highly detailed form consisting of 60 questions covering a wide range of skills. This form may be most useful for evaluating the success of a training program per se or of evaluating the mastery of skills taught in the training program on the part of an individual. The second is a more concentrated form consisting of a 30 item subset of the 60 item version.

Psychometrics, Inc.

The Computer Bookstore

The type of ***organization*** offering the course is a company.

Name and Address of offeror: The Computer Bookstore
P.O. Box 556
Shalimar, FL 32579

Pricing information: available upon request. For further information ***contact*** Dave Nichols at telephone (904)862-6439.

Offeror's Comments :
The Computer Bookstore is pleased to announce that we are now supporting the Ada Program by offering Ada book titles to the computer industry, worldwide. Since we are informed of new titles to be published (up to six months prior to the publication date), we are able to offer our customers the very latest titles, as well as the popular backlist titles. We act as the publisher's representative and all books are offered at the publisher's current list price.

U.S. Professional Development Institute

The type of ***organization*** offering the course is an educational institution.

Name and Address of offeror: U.S. Professional Development Institute
1620 Elton Road
Silver Spring, MD 20903

Pricing information: available upon request. For further information ***contact*** Sy Rottenberg at telephone (301)434-8770.

Offeror's Comments :
U.S. Professional Development Institute custom-designed on-site training programs provide an intensive, personalized format, giving your staff and you the opportunity to concentrate on issues directly related to your organization. Cost effective training - ideal for groups of ten or more. Since 1977, USPDI has trained over 18,000.

4. TEXTBOOKS

Textbooks are listed in alphabetical order by text title.

A Programmer's View of the Intel 432 System

Author(s)
Elliott I. Organick, U. of Utah

Published by:
McGraw-Hill Book Co.
1221 Ave. of Americas
New York, NY 10020
Publication date : 1983

ISBN: 0-07-047719-1
Library of Congress: QA76.8.I267073
Number of pages: 418

The principle theme in this book is the effective implementation of the concepts of multiprocessing, object-based design, and object filing systems as exhibited by the I 432. This book provides the user with a new dimension for expressive power and productivity for both system software and applications programs, and at new levels of simplicity and efficiency. Some of the areas discussed include: structure and use of Ada packages and tasks; hardware and system software support for interprocess communication and for process (task) dispatching and scheduling; architectural and Ada language support for object structures; emphasizing type management and access control; the supporting operating system iMAX; several of its important "user-interfaces"; the importance of input-output peripheral sub-systems and their relationship with the central object-based architecture of I 432; and iMAX provided implementations of process management, memory management, and object filing; and user interfaces to these facilities. This book contains three sets of appendices providing lists of I 432-based literature references; a group of compiled Ada program units comprising versions of an investment management system; and user interfaces to iMAX that help confirm and expand understanding of the functionality, scope, and flexibility of iMAX.

A Programmer's View of the Intel 432 System

Ada - An Introduction, 2nd Edition

Author(s)
Henry Ledgard, Human Factors Ltd.

Published by:
Springer-Verlag
P.O. Box 2485
Secaucus, NJ 07094
Publication date : 1983

ISBN: 0-387-90814-5
Paperback cost : $14.95

The primary subject areas include introductory programming.

Written just one month after the DoD language was revised; concentrates on the numerous changes in standards, incorporating much of the material from the reference.

Ada Applications and Environments

Author(s)

Published by:
IEEE Computer Society Press
Publication date : 10/84

ISBN: 0-8186-0590-1
Library of Congress: 84-81844
Number of pages: 165
Paperback cost : $32

The primary subject areas include problem solving principles.

This book contains conference proceedings on research and development related to the Ada language and environments. It covers topics on methodologies, run-time models, environments, tools, distributed implementations, applications, use, validation, and educational issues.

Ada Applications and Environments

Ada as a Second Language

Author(s)
Norman H. Cohen, SofTech, Inc.

Published by:
McGraw-Hill
Publication date : 1986

ISBN: 0-07-011589-3
Number of pages: 960
Paperback cost : $32.95

The primary subject areas include advanced programming.

This book is at once a tutorial introduction to the Ada Language and a complete reference. In teaching the language the book discusses complicated matters in a patient, and reassuring manner, with generous explanations. As a reference, the book contains a thorough and comprehensive description of the nitty-gritty details a programmer needs to write practical, working Ada programs. "Ada as a Second Language" can be used to obtain a reading knowledge of the Ada language, to obtain a writing knowledge of the Ada language, or to serve as a programming reference for someone who is already writing Ada programs. It a can be used as a textbook in a course or to learn the Ada language on one's own. The book is entitled "Ada as a Second Language" because it is an introduction to the Ada programming language, but not to programming. The first language can be any statement-oriented high-level language, though FORTRAN, PL/I, and Pascal are addressed explicitly. The book's emphasis is overwhelmingly on the Ada language, and other languages are discussed only to the extent that this will help the reader learn the Ada language. "Ada as a Second Language" explains the programming and software-engineering concepts underlying the features of the Ada language before explaining the features themselves. The book offers specific practical advice on how and why to use each feature and warns about pitfalls to be avoided. Good programming style is explained and practiced throughout the text. The exposition emphasizes the concerns of the practicing programmer, not theoretical principles of programming languages. Each chapter ends with a summary and a set of exercises. The exercises include drills on fundamental concepts as well as programming problems. The reader will benefit from over 200 complete Ada compilation units that have been compiled by a validated Ada compiler to verify their legality. There are abundant cross-references throughout the text.

Ada for Experienced Programmers

Author(s)
A. Nico Habermann, Carnegie-Mellon University
Dewayne E. Perry, Pegasus Sys & Carnegie-Mellon

Published by:
Addison-Wesley Publishing Co.
Reading, MA 01867
Publication date : 1983

ISBN: 0-201-11481-X
Library of Congress: 82-20757
Paperback cost : $20.95

The primary subject areas include software engineering.

The goal of this book is a presentation of the major features of the Ada programming language and their relevance to software engineering. Since concepts such as data abstraction, exception handling and concurrency are of fundamental importance to the design and maintenance of software systems, we will explain in detail how Ada's facilities support such concepts. We do this by discussing a series of non-trivial example programs that exhibit the typical use of the relevant language constructs. The examples are chosen on the basis of their suitability in illustrating specific language features. Software engineering issues are taken into account, but are not the primary motivation for selecting the particular examples. Our goal is achieved if the examples demonstrate to what extent the Ada language supports good programming style in software engineering. This book is written for experienced programmers who, when learning a new language, must often choose between using an introductory text and using a reference manual. Either choice is unsuitable, because an introductory text contains too much explanation, ignoring a programmer's knowledge and experience, whereas a reference manual contains too little explanation, aiming at a complete and concise description of the language syntax and semantics. This book supplies a need between these two extremes. On the one hand, unlike an introductory text, it exploits the reader's general knowledge of programming techniques. On the other hand, unlike a reference manual, it explains the significance of the language features by detailed discussions and apt examples.

Ada for Multi-Microprocessor

Author(s)
Mike Tedd, SPL Int'l & U College of Wales
Stefano Crespi-Reghizzi, Politecnico di Milano
Antonio Natali, University of Bologna

Published by:
Cambridge University Press

ISBN: 30103-3
Hardcover cost : $29.95

The primary subject areas include software engineering.

This book examines how the Ada language can be used for distributed systems. It discusses how to construct and run an Ada program for a variable target configuration of several microcomputers, interconnected through shared memories, multi-access busses, local area networks, or end-to-end lines. The book recognizes that the Ada language and current Ada Programming Support Environments (APSEs) do not address distributed targets, and therefore considers different approaches for coping with distribution without changing the language or unduly restricting how it is used. The approach found most natural requires the designer to cluster tightly coupled Ada tasks into "virtual nodes." The authors examine the implications of this approach in detail and study further implications concerning use of the multi-microprocessor approach to achieve reliability and extensibility.

Ada for Programmers

Author(s)
Eric W. Olsen, U. of Ca. at Irvine
Stephen B. Whitehall, U. of Ca. at Irvine

Published by:
Reston Pub. Co.
11480 Sunset Hills Road
Reston, VA 22090

ISBN: 0835901491
Number of pages: 310
Hardcover cost : $20.95

The primary subject areas include advanced programming and introductory programming.

The Reference Manual for Ada Programming Language (LRM) is not intended for use by anyone not already familiar with the Ada language. This book presents an overview of the Ada programming language. The Ada topics covered in this book are predefined types and operations, expressions, object declarations, basic Ada statements, subprograms, packages, user-defined types, derived types, real types, array types, record types and access types, operator overloading, overloading enumeration literals, generics, tasking, exceptions, program structure and separate compilation.

Ada for Programmers

Ada for Specification: Possibilities and Limitations

Author(s)
S. J. Goldsack, Imperial College of Sci & Tec

Published by:
Cambridge University Press
Publication date : 5/85

ISBN: 30853-4
Number of pages: 220
Hardcover cost : $24.95

The primary subject areas include advanced programming and introductory programming.

This book examines the use of the Ada programming language in the specification stage of a software development project, placing emphasis throughout on the issues involved in specification and the generation of ideas for software tools for use in an Ada environment. It begins with a discussion of the role and purpose of specification in a large-scale software project, describing the features that a specification language should have and assessing the Ada language as a candidate. The use of the Ada language as a program design language and in system modeling is then examined, together with a number of other specification languages. Conversion of a specification into a program and tools for handling specifications are then considered, before the findings are summarized and conclusions drawn. An appendix describes an Ada-related specification language, adapted to general engineering systems. The book is based on a study for the Commission of the European Communities, completed in July 1984. It will interest all who are engaged in research into the properties and use of specification languages and the design of tools for support of formal approaches to programming.

Ada in Practice

Author(s)
Christine Ausnit, SofTech, Inc.
Norman H. Cohen, SofTech, Inc.
John B. Goodenough, SofTech, Inc.
R. Sterling Eanes

Published by:
Springer-Verlag
Publication date : 1985

ISBN: 0-387-96182-8
Library of Congress: QA76.73.A35A287
Number of pages: 195

The primary subject areas include advanced programming, introductory programming, software engineering and problem solving principles.

ADA IN PRACTICE presents case studies on the Ada language written as part of an effort to identify and resolve issues related to Ada usage. The primary goal is to promote effective use of Ada in embedded computer systems. Programming examples serve as guidelines for proper usage of Ada features and point out common misconceptions and programming errors. The focus on alternative solutions to real-world problems should be of interest to Ada programmers and managers as well as to members of the academic community.

Ada Language Reference Manual

Author(s)
Gensoft Corporation

Published by:
Gensoft Corporation

ISBN: 1986
Number of pages: 362
Paperback cost : $12.95

The primary subject areas include advanced programming, introductory programming and software engineering.

This manual is a reprint of the Ada Language Reference Manual in a convenient 6 x 9" format. It includes the ANSI/MIL-STD-1815A definition of Ada plus Appendix F which describes 16-bit and 32-bit target machine characteristics and implementation dependencies as required by the Department of Defense (DoD). It also contains an appendix which describes the structure and organization of the STCAda* Compiler and Ada development environment which were validated by DoD in August 1983. * STC Ada is a product of Gensoft Corporation and is owned by MSL.

Ada Language System Textbook

Author(s)
Elaine Primack, SofTech, Inc.

Published by:
SofTech, Inc.

The Ada Language System, or ALS is a comprehensive, integrated programming environment designed to aid in the development and maintenance of Ada programs. Its extensible tool set, a VAX Ada compiler and a symbolic debugger, provides an open-ended environment. Configuration control is provided through a variety of features, including protected access to files and records of how objects are created. Each chapter includes exercises to provide practical knowledge of the tools.

Ada Language System Textbook

Ada Primer

Author(s)
CENTACS/CECOM, U.S. Army

Published by:
CENTACS/CECOM
Paperback cost : $26.50

The primary subject areas include introductory programming and problem solving principles.

Government personnel may order this document from the Defense Technical Information Center (DTIC). Industry may order this document from National Technical Information Service (NTIS). The order number for both DTIC and NTIS is AD A148 855. The Ada Primer leads the novice through the fundamentals of Ada by addressing the "Pascal subset" of Ada. NTIS COST: Paper Copy: $26.50; Microfiche: $4.50 each.

The Ada Programming Language

Author(s)
Sabina H. Saib, General Research Corp.
Robert E. Fritz, SAI Comsystems

Published by:
IEEE Computer Society Press
Publication date : 1983
Library of Congress: 82-84689
Paperback cost : $30.00

The primary subject areas include advanced programming, introductory programming, software engineering and problem solving principles. Other application area(s) include large bibliography, real-time, embedded systems.

An historical as well as current status discussion of the Ada language is given. Topics covered include: design methodology, Ada environments, implementations and real-time programming. In addition, applications, criticisms, and influences of the Ada language are presented.

The Ada Programming Language

Ada Programming with Applications

Author(s)
Eugen Vasilescu, Hofstra University

Published by:
Allyn and Bacon, Inc.
Publication date : 1986
Number of pages: 500

The primary subject areas include advanced programming, introductory programming, software engineering and problem solving principles.

This book is concerned with commercial or business uses of Ada and is more in line with a computer information systems approach. An often-stated goal of computer information systems curricula is to prepare the graduate to adequately function in an entry level position as a systems analyst, applications programmer or information systems specialist. The book is consistent with this goal. It assumes that the reader has had at least an introductory course in computers and some elementary knowledge of a programming language like BASIC, COBOL, Pascal, FORTRAN, PL/1. The book is self-contained and among its objectives are the following: 1. To develop an understanding of a strongly-typed language and its advantages for efficient and reliable implementation of packages. 2. To obtain practical experience and knowledge in designing packages for business use. 3. To gain a general understandiing of advanced concepts like data encapsulation, concurrency, and modularity. Readers are not overwhelmed with material. The syntax of Ada is introduced in measured doses, and the presentation of complete Ada programs is emphasized. At the end of the first chapter, readers should know enough about types and statements so they will be able to write simple programs. Chapters 2 and 3 introduce additional types, such as real types, array types, record types and access types, and statements like the "for" loop. Concepts like membership operators, records with variants, and more Ada statements (such as the "case" statement) are introduced in chapter four. Chapter 5 and 6 cover subprograms and details about type conversions, pragmas, scope, and visibility. Thus, the first six chapters of the book deal with concepts one may find (and relate to) in other languages. The second part of the book (the last five chapters) deals with concepts that make Ada suited for embedded computer systems and systems design, namely, packages, unique I/O control, separate compilation, parallel processing, and exception handling. This book is based on notes prepared for an Ada course offered to undergraduate students majoring in business computer informations systems at Hofstra University. Inquiries may be addressed directly to the author.

Ada: A Programmer's Conversion Course

Author(s)
Michael J. Stratford-Collins

Published by:
John Wiley & Sons, Inc.
605 Third Avenue
New York, NY 10158
Publication date : 1982

ISBN: 0470-273321
Number of pages: 192
Hardcover cost : $48.95

The primary subject areas include advanced programming and software engineering.

This book is aimed at providing the professional programmer with an easy means to learn the basics of the Ada language. It therefore assumes that the reader has knowledge of at least one other high-level programming language. It is not intended to be a primer on programming, not a reference manual for every nook and cranny of the language. It concentrates instead on those features which will be used most often by most programmers. The first five chapters are designed to cover the basic language elements which are common to most modern procedural languages. Chapter 1 is an introduction, chapter 2 is concerned with control over program flow, chapters 3 and 4 with data types and data structures and chapter 5 with procedures and functions. Chapters 6,7,8 and 9 cover the package concept, the generic concept, support for exception handling and language constructs for tasking support, respectively. Chapter 10 is devoted to a discussion of the issues of program structure, and name scope and visibility, and the book closes with a chapter covering the Input and Output facilities provided by the Ada language. For reference purposes, Appendix A provides a syntax definition of the language while Appendix B contains a list of Ada language reserved words.

Ada: A Programmer's Conversion Course

Ada: A Programmer's Guide with Microcomputer Examples

Author(s)
James Stanley, Honeywell
Donald Krantz, Honeywell
John Fung, Honeywell
Paul Stachour, Honeywell

Published by:
Addison-Wesley
Reading, MA
Publication date : 1985

ISBN: 0-201-16416-7
Library of Congress: QA76.73.A35S83 1985 005.13'3 85-15006
Number of pages: 358
Paperback cost : $21.95

The primary subject areas include introductory programming.

This book is an informal but complete introduction to the Ada programming language. The body of the text provides a discussion of Ada's features along with extensive examples in ANSI Ada as well as in Janus, the major language subset for 8 and 16 bit microcomputers (under CP/M and MSDOS). Chapters 1 through 5 describe Ada's basic features, similar to those in other high level languages. Many parallel examples are given in Ada, BASIC, Pascal, and C. Careful attention is given to features unique to Ada. Chapter 6 provides a thorough treatment of Ada's I/O facilities. With Chapter 7, the language features covered become increasingly specific to Ada. This chapter introduces arrays and records and goes on to discuss array slices, record discriminants, and aggregate assignments. A histogram program serves as a useful example. Chapter 8 covers real numbers, derived types, and access types. Chapter 9 describes a typical Ada package defining a data type and the subprograms that work on objects of that type. Chapter 10 treats private types and generic units. Chapter 11 describes Ada's approach to implementation specific features, particularly in relation to microcomputers Chapter 12 presents some pointers on good programming style as applied to language subsets and microcomputers. Chapter 14 treats Ada's method of multitasking. A concluding chapter discusses some broader issues; e.g., the Ada Programming Support Environment (APSE), the prospects for an Ada software components industry, and the ways Ada compilers are likely to be adapted to different sorts of microcomputers.

Ada: An Advanced Introduction

Author(s)
Narain Gehani, Bell Laboratories

Published by:
Prentice-Hall
200 Old Tappan Road
Old Tappan, NJ 07675
Publication date : 1983

ISBN: 0-13-003962-4
Library of Congress: QA76.73.A35643
Number of pages: 352
Paperback cost : $21.95

The primary subject areas include advanced programming and problem solving principles.

This book is written especially for readers who have a good knowledge of at least one procedural language such as Pascal, C, PL/1, Algol 60, Simula 67, Algol 68 or FORTRAN. The book focuses primarily on the novel aspects of the Ada language, which are illustrated by many fairly difficult and concrete examples written out in full. Interesting differences between the Ada language and other programming languages are commented upon. The example programs are developed using stepwise refinement to assist the reader in understanding their design and development. The first chapter is an introduction to the feature of the Ada language that are rather common, such as those found in programming languages like Pascal, C, PL/1 or FORTRAN. Elaborate details about each feature are not provided. The remaining chapters focus on the novel aspects of the Ada language, devoting a chapter to each of the following topics: treatment of types, packages, concurrency or tasking, exception handling generic facilities, program structure and separate compilation, and representation clauses and implementation dependent features.

Ada: An Advanced Introduction Including the LRM

Author(s)
Narain Gehani, Bell Laboratories

Published by:
Prentice-Hall
200 Old Tappan Road
Old Tappan, NJ 07675
Publication date : 1984

ISBN: 0-13-003997-7
Number of pages: 672
Hardcover cost : $29.95

The primary subject areas include advanced programming.

Written for readers with a knowledge of at least one programming language (Pascal, C, PL/1, Algol, FORTRAN, etc.), this volume focuses primarily on the novel aspects of the Ada language - data encapsulation, concurrency, generic facilities, exception handling and others. The ANSI standard the Ada langugage is used in the book. All programs have been tested on the NYU Ada Compiler. Interesting differences between the Ada language and other programming languages are noted. Stepwise refinement is used to develop programs so that the reader can easily understand design and development.

Ada: An Introduction

Author(s)
Sabina H. Saib, Thomson-CSF, Inc.

Published by:
Holt, Rinehart and Winston
Publication date : 1985
Library of Congress: 84-27987
Number of pages: 350
Hardcover cost : $25.95

The primary subject areas include advanced programming, introductory programming, software engineering and problem solving principles.

This introductory Ada text assumes some background and familiarity with computers but not with the Ada language itself. Central to this text are many examples and problems. An introductory class may omit the later chapters on more advanced programming techniques while an intermediate programmer may skim the first chapters.

Ada: Concurrent Programming

Author(s)
Narain Gehani, Bell Laboratories

Published by:
Prentice-Hall
200 Old Tappan Road
Old Tappan, NJ 07675
Publication date : 1984

ISBN: 0-13-004011-8
Number of pages: 272
Paperback cost : $24.95

The primary subject areas include advanced programming.

Written especially for persons with a knowledge of a high level sequential programming language such as C, Pascal, PL/1, FORTRAN, or Algol 60. Gehani explains the concurrent programming facilities in the Ada language and shows how to use them effectively in writing concurrent programs.

Ada: Language, Compilers, and Bibliography

Author(s)
M.W. Rogers, CEC IT Task Force, Brussels

Published by:
Cambridge University Press
32 East 57th Street
New York, NY 10022
Publication date : 08/84

ISBN: 0-521-26464-2
Library of Congress: 84-7688
Hardcover cost : $17.95

The primary subject areas include advanced programming and software engineering.

This book provides essential reference material for those involved in the application of software engineering concepts using the Ada language. It consists of three components: 1) The Reference Manual for the Ada Programming Language (ANSI/MIL-STD-1815A) 2) Guidelines for Ada compiler specification and selection. This Guide has been produced by a number of leading experts involved in implementing Ada compilers. It lists the characteristics of an implementation that should be taken into account in the specification or selection of an Ada compiler. 3) A selective bibliography for the Ada langugage. This well-structured bibliography lists the principle works on the Ada language, covering all aspects from the history and evolution of the language to the latest thinking on the many features combined for the first time in the Ada language. This is a reference volume that should never be far from the workbench of the serious software engineer or programmer using the Ada language.

Ada: Language, Compilers, and Bibliography

Advanced Ada

Author(s)
CENTACS/CECOM, U.S. Army

Published by:
CENTACS/CECOM
Paperback cost : $26.50

The primary subject areas include advanced programming and problem solving principles.

Government personnel may order this document from the Defense Technical Information Center (DTIC). Industry may order this document from the National Technical Information Service (NTIS). The order number for both DTIC and NTIS is AD A146257. Advanced Ada discusses data structures and algorithms, data abstraction and information hiding. It is assumed the reader is familiar with all the concepts covered in the Ada Primer. NTIS COST: Paper Copy: $26.50; Microfiche: $4.50 each.

An Attribute Grammar for the Semantic Analysis of Ada

Author(s)
J. Uhl
S. Drossopoulou
G. Persch

Published by:
Springer-Verlag
P.O. Box 2485
Secaucus, NJ 07094
Publication date : 6/82

ISBN: 3-540-11571-4
Paperback cost : $23.10

Attribute grammars (AGs) are an established tool for the formal specification of the semantics of a programming language and also the specification of the language's compiler. This book contains an attribute grammar specifying the static semantics of the Ada language, together with an explanatory introduction. This attribute grammar completely describes the semantics of the Ada language, as published in July 1980. Part A of this volume describes the development of the AG. It contains a survey of the tasks of semantic analysis within a front-end, the use of attribute grammars for the specification of static semantics and semantic analysis, and the procedure for writing the AG. Part B is a rationale for the AG: the three main tasks of semantic analysis are described, the main attributes are introduced, their use, their dependencies and their types are outlined.

An Introduction to Ada

Author(s)
Stephen Young, U. of Manchester, UK

Published by:
John Wiley & Sons, Inc.
605 Third Avenue
New York, NY 10158
Publication date : 1983

ISBN: 0-470-27551-0
Number of pages: 320
Hardcover cost : $29.95

The primary subject areas include advanced programming, introductory programming and problem solving principles.

This book is aimed at students and experienced programmers. It provides a complete introduction to programming in the Ada language. All Ada language features are carefully explained and wherever possible illustrated by examples. A key feature of the book is the inclusion of an extended example at the end of each chapter. These are intended to give further clarification of the points covered in that chapter, but more importantly they are used to illustrate how programs should be designed in the Ada language. In particular, strong emphasis is placed on the use of the package in supporting data abstraction. Finally, exercises are provided with each chapter, and solutions to a selection of these are given at the end of the book.

Beginning Programming with Ada

Author(s)
James A. Saxon
Robert E. Fritz

Published by:
Prentice-Hall
11480 Sunset Hills Road
Reston, VA 22090
Publication date : 1983

ISBN: 0-13-071688
Number of pages: 240
Paperback cost : $16.95

The primary subject areas include introductory programming.

Audience: students or individuals with little or no programming experience. Material: elements of programming and the Ada programming language, including such concepts as data types, control statements, etc. Remarks: heavy emphasis on fundamentals of programming make it suitable for someone who has never programmed before.

Beginning Programming with Ada

Comparing & Assessing Programming Languages (Ada, C, Pascal)

Author(s)
Alan Feuer, Catalytix Corporation
Narain Gehani, A.T.&T., Bell Labs.

Published by:
Prentice-Hall
Englewood Cliffs, NJ 07631
Publication date : 1984

ISBN: 0-13-154857-3
Number of pages: 264
Hardcover cost : $24.95 Paperback cost : $16.95

Comparing and Assessing Programming Languages, edited by Alan Feuer and Narain Gehani, contains over fifteen articles by leading experts in software performance and evaluation. The contributors explore the plusses and minuses of three popular languages: the Ada language, C, and Pascal. The exploration contains reviews of languages' features, performance characteristics, security and reliability measures, judgments of suitability for commercial and other applications, and much more. The judgments and evaluations needed to select a programming language are complex, and the procedures for performing the evaluations are typically ill-defined. An outstanding feature of Comparing and Assessing Programming Languages is that it provides a methodology which you can use to evaluate any language.

Concurrent Programming in Ada

Author(s)
A. Burns, University of Bradford

Published by:
Cambridge University Press
Publication date : 1986

ISBN: 30033-9
Number of pages: 241
Hardcover cost : $27.95

The primary subject areas include advanced programming and software engineering.

This book introduces the topic of concurrency and shows how the Ada programming language deals with it. A main design specification for Ada is that it should contain the features necessary for concurrent programming. The need to produce software that models inherent parallelism is important in many applications, control, and general purpose multi-processor system software. Although knowledge of the Tasking Model is not necessary for many other applications of Ada, the full power of the language can only be obtained if this model is understood.

Concurrent Programming in Ada

Data Structures With Ada

Author(s)
Michael B. Feldman, George Washington University

Published by:
Reston (Prentice-Hall)
Publication date : Apr 85

ISBN: 0-8359-1220-5
Library of Congress: QA76.73.A35F45 1985
Number of pages: 314
Hardcover cost : $29.95

The primary subject areas include advanced programming.

This is a textbook, suitable for a college-level course in data structures and algorithms, corresponding roughly to CS7 in the ACM Curriculum. The language used for the algorithms is Ada; there is strong emphasis in the book on abstract data types as their implementation as Ada packages. Although the book is not highly mathematical in nature, there is considerable emphasis on informal analysis of algorithm performance complexity. The syntax of Ada, per se, is not taught in the book; it is intended to be used in conjunction with an introductory Ada book such as Barnes or Olsen/Whitehill. A number of interesting design problems are presented and partially coded in Ada; these are suitable for student programming projects. Several sections called "style guides" are also given, in which the primary focus is on the emulation of Ada data-structure constructs in languages in which these constructs are not "built in".

Developing Large Software Systems Using Ada

Author(s)
Sommerville/Morrison, U. Strathclyde

Published by:
Addison-Wesley Publishing Co.
Jacob Way, Reading, MA 01867
Publication date : 9/85

ISBN: 14227
Number of pages: 400
Paperback cost : $23.95

The primary subject areas include software engineering.

The Ada language is becoming the standard language for developing and implementing large software systems. This book shows how the language can be best used in this context, by establishing a set of programming principles to be used in large system development, and showing how the Ada language fits in with these principles. The authors begin by setting the Ada language in its historical context and in the overall context of the software life cycle. They go on to examine aspects of programming environments and the techniques of software design, including object-oriented design and formal notations for software specifications. The electronic mail system is used for design examples throughout the book. Later chapters deal with the effective use of Ada types, program development, parallel, and real time programming, the problems of I/O programming, and programming for portability.

DIANA: An Intermediate Language for Ada

Author(s)
G. Goos
J. Hartmanis

Published by:
Springer-Verlag
Publication date : 1983

ISBN: 3-540-12695-3

DIANA is an acronym for Descriptive Intermediate Attributed Notation for Ada. DIANA describes the form of an intermediate language intended to be used as an internal form of Ada programs. Typically, this is the result of lexical, syntactical, and static semantic analysis, but before any actual dynamic semantic analysis, code optimization, or code generation. DIANA has already been effectively used in Ada compiler environments (ROLM). This book is not an introductory text. It contains state-of-the-art information on Ada compiler design, and is intended for that audience.

Fundamentals of Programming Languages, 2nd Edition

Author(s)
Ellis Horowitz, Univ. of Southern California

Published by:
Computer Science Press
Rockville, MD
Publication date : 1984

ISBN: 0-88175-004-2
Library of Congress: QA76.7.H67 1983b 001.64'24 83-15369
Number of pages: 446
Hardcover cost : $31.95

The primary subject areas include introductory programming.

The best possible way to study and understand today's programming languages is by focusing on a few essential concepts. These concepts are the subject of this outstanding book and provide a framework for understanding not only current, but future language design. Numerous examples from Ada, Pascal, LISP, and other programming languages are included, as is a chapter on object oriented programming languages by Tim Rentsch. This book is a fascinating study of complexities of programming languages.

Fundamentals of Programming Languages, 2nd Edition

Handbook of Software Engineering

Author(s)
Charles R. Vick
C.V. Ramamoorthy

Published by:
Van Nostrand Rienhold Co.
135 West 50th Street
New York, NY 10020

ISBN: 26251-2
Number of pages: 768
Hardcover cost : $62.50

The handbook examines recent trends and the most up-to-date technology in the field. It explains innovative strategies for hardware/software tradeoffs to help you apply new advances in computer technology that reduce costs and increase performance and reliability. Ready-to-use performance measures and fault tolerance techniques ensure that you get the most out of your system. Formal verification procedures show you how to determine if various program components operate consistently for all combinations of data. Fully discussed are major developments in the area of data base management systems, such as, data base models, data base languages, access methods, data base design, and future trends. Practical guidance includes: graph modeling and analysis, methods of expressing algorithms, concurrency control in distributed data base management systems, modeling and analysis of concurrent systems using Petri nets, choosing a computer language, and functional and applicative programming. Software management issues, such as software costing, the definition of products in each phase of the development process, and the tools available to speed and control the process are also covered.

Introduction to Ada

Author(s)
David Price

Published by:
Prentice-Hall
200 Old Tappan Road
Old Tappan, NJ 07675
Publication date : 1984

ISBN: 013-477653-4
Hardcover cost : $22.95

The primary subject areas include introductory programming.

An introductory guide to the Ada programming language, appropriate for readers with all levels of programming experience. The text's tutorial structure starts with essential concepts and proceeds logically to more advanced features. All concepts are explained in clear, understandable terms. Extensive examples - sample programs and program fragments - illustrate the Ada language usage. Uses the most recent definition of the Ada language (1982 Department of Defense Standard).

Invitation to Ada & Ada Reference Manual

Author(s)
Harry Katzan Jr.

Published by:
Petrocelli Books, Inc.
Publication date : 1982

ISBN: 089433-132-9
Library of Congress: 82-3686
Number of pages: 429
Hardcover cost : $32.95

The primary subject areas include introductory programming, software engineering and problem solving principles.

This book is an invitation to scientists, engineers, analysts, and students, to learn Ada. Ada is a well developed language that incorporates the most important advances in software methodology of the past decade. In Invitation to Ada, you'll find a lucid introduction to the features that give Ada its problem-solving power-- subprogram modularity and concurrency. The book emphasizes classical programming and encourages the development of programming style and good programming practice. Also included in this volume is the complete "Reference Manual for the Ada Programming Language" produced by the United States Department of Defense July 1980 (reprinted November 1980).

Introduction To Programming Ada

Author(s)
Sabina Saib, General Research Corp.

Published by:
CBS Educational & Professional
Publication date : Feb 85

ISBN: 0-03-059487-1
Library of Congress: 8427987
Number of pages: 400

The primary subject areas include introductory programming and problem solving principles.

Based on the 1983 ANSI standard, this introductory text provides complete coverage of the modern Ada programming language. Presently being developed by academic, industrial, and government groups for a wide variety of computers using a spiral approach, this book builds from elementary concepts to the most advanced forms. With this approach instructors have the option of omitting final sections. Written as a tutorial rather than a manual, the text is accessible and fully illustrated. General discussions are balanced by a wealth of fully debugged, error-free examples and numerous practice exercises.

Introduction To Programming Ada

Introductory Ada: Packages for Programming

Author(s)
Putnam P. Texel, P.P. Texel & Company, Inc.

Published by
Wadsworth Publishing Co.
Belmont, CA
Publication date : 1986
Number of pages: 460

The primary subject areas include introductory programming, software engineering and problem solving principles.

This text is designed for the individual who perhaps has had one introductory course in BASIC, FORTRAN, or PASCAL. The course could have been in high school or a first course in college. This text will serve as an excellent introduction to Ada for those individuals who have heard about Ada and are curious to know what makes this language so different from other languages. Finally, this text is appropriate for those individuals well versed in another language who are looking to learn some new concepts. The order of topics is top down. Packages are presented first, basic control constructs second, and types third. The student is led from using packages to designing packages. Exercises are provided for each chapter. Because stubbing and separate compilation are introduced early, the exercises serve as a prototype to the world of commerical software development. The emphasis on the exercises is the modification of existing code, developing programs as a team, and building solutions from existing packages. Problem solving is emphasized, and syntax is de-emphasized (although taught). Graphics is used as the vehicle for introducing packages. The code for a simple graphics package is included.

Invitation to Ada Condensed Edition

Author(s)
Harry Katzan Jr., Katzan International

Published by:
Petrocelli Books, Inc.
Publication date : 1984

ISBN: 089433-239-2
Library of Congress: 83-26968
Number of pages: 173
Paperback cost : $14.95

The primary subject areas include advanced programming and introductory programming.

The audience for this book is persons who will eventually program in the Ada language including scientists, engineers, analysts, and students. Moreover, the reader need not be conversant in Pascal, Algol, PL/1 or any other high-level programming language to use this book effectively. Certainly a basic knowledge of computers is needed, but that's it. Invitation to Ada emphasizes classical programming and leaves many of the esoteric features in the Ada language for advanced books on the subject.

Life Cycle Support in the Ada Environment

Author(s)
John McDermid, Systems Designers Ltd
Knut Ripken, TECSI - Software

Published by:
Cambridge University Press
32 East 57th Street
New York, NY 10022
Publication date : Mar 84

ISBN: 0-521-26042-6
Library of Congress: 83-18911
Hardcover cost : $24.95

The primary subject areas include software engineering.

This book represents a first attempt at an integrated Ada Programming Support Environment (APSE) based on coherent methods covering all stages of the Software Life-Cycle. The environment supports programmers, software engineers, and their managers with harmoniously cooperating tool sets. The system was designed by Systems Designers, Ltd., and TECSI-Software with the support of the Commission of the European Communities. It presents a detailed life-cycle model, discusses a management philosophy compatible with that model, and gives an experimental assessment of individual methods.

Methods and Tools for Compiler Construction

Author(s)
B. Lorho, Universite d'Orleans

Published by:
Cambridge University Press
Publication date : 8/84

ISBN: 26843-5
Hardcover cost : $49.50

This book presents an introduction to compiler construction, emphasizing specific areas where significant improvements have been made recently: attribute grammar, compilation from semantic definitions, code generation and optimization, and Ada compiling. It examines the state of the art in compiler construction and discusses new perspectives in automatic compiler systems (meta-compilers). A case study concerning Ada compilation is included. It discusses Ada specification problems, modular compilation of the Ada code, the codification of Ada compilers, and aid systems. The book itself consists of sixteen papers presented at an advanced course sponsored by the Commission of the European Communities and the Institut National de Recherche en Informatique et en Automatique. The course was held in Rocquencourt in December, 1983. Two of the papers refer directly to Ada: J. Teller, "Production Quality Ada Compilers" and J.C. Heliard, "Compiling Ada."

Parallel Programming in ANSI Standard Ada

Author(s)
George W. Cherry, George Washington University

Published by:
Prentice-Hall
P.O. Box 2037
Reston, VA 22090
Publication date : Mar 84

ISBN: 0-8359-5434-X
Library of Congress: QA76.6.C444 1984
Hardcover cost : $21.95

The primary subject areas include advanced programming, introductory programming, software engineering and problem solving principles.

The book treats parallel independent processes (identical and nonidentical), parallel communicating processes, parallel sorting (including an O(n) pipeline sort), parallel linear search, parallel root finding, and other parallel algorithms, process pipelining, single-slot and multi-slot buffers (including pipeline buffers) and their use, resolving structure clashes by means of task pipelines, object (flow) graphs, Petri net representations of processes and process communications, exception handling in parallel programs, and other topics (such as the semantics of rendezvous, selective waiting, and task types). The book illustrates parallel concepts through case studies, complete programs, and many exercises with complete answers.

Portability and Style in Ada

Author(s)
John Nissen, GEC Telecommunications
Peter Wallis, University of Bath

Published by:
Cambridge University Press
32 East 57th Street
New York, NY 10022
Publication date : Mar 84

ISBN: 0-521-26482-0
Library of Congress: 83-26237
Hardcover cost : $24.95

The primary subject areas include advanced programming.

This book contains two guides, one on the portability of Ada programs and one on Ada programming style. The guides are the result of work by the Ada-Europe Portability Working Group and represent the combined expertise of some of the leading authorities on the Ada language. In the design of the Ada language, compromises were made between portability and freedom of the compiler implementor; also there are features in the Ada language that allow the programmer access to machine representations. The portability guide discusses the necessary restrictions on the use of the Ada language so that truly portable programs can be written. Although the Ada language is a significant step forward in the encouragement of good programming practice, it is a large language, and so guidance is needed on how best to use the many features. The style guide is concerned with how the Ada language should be used to contribute towards legibility, maintainability, and correctness of programs. To facilitate use of the guides, the chapters and section numbers corresponds to those in the Reference Manual for the Ada Programming Language (ANSI/MIL-STD 1815A, 1983).

Principles of Programming Languages

Author(s)
R. D. Tennent

Published by:
Prentice-Hall
Publication date : 1981

ISBN: 0-13-709873-1

The primary subject areas include advanced programming.

"This book is a systematic exposition of the fundamental concepts and general principles underlying programming languages in current use."

Problem Solving Principles for Ada Programmers: Appl. Logic, Psychology, & Grit

Author(s)
William E. Lewis, IBM Corp.

Published by:
Hayden Book Company, Inc.
50 Essex St. (Dept. #CD 82
Rochelle Park, NJ 07662
Publication date : 1982

ISBN: 081045211-1
Number of pages: 183
Hardcover cost : $9.95

The primary subject areas include problem solving principles.

This text is based upon the "Reference Manual for the Ada Programming Language" (Proposed Standard Document) that was printed by the United States Department of Defense in July 1980. Its aim is to provide a problem-solving background and alternative solution paths from among which the reader may choose. Chapter 1 introduces the basic building blocks of problem solving and provides some insights into the psychological influences involved. Chapter 2 consists of a set of independent "prescriptions" in problem solving. Chapter 3 consists of a set of advanced "prescriptions" in problem solving to augment the basic prescriptions in Chapter 2, Chapter 4 presents approaches for attacking more complicated problems for which the prescriptions of Chapter 2 and 3 may not provide an appropriate panacea. The concept of top-down programming is the main theme. A programming problem using the top-down approach is illustrated in six different programming languages. A second and more complex problem is also analyzed. Chapter 5 applies many of the problem-solving techniques discussed in previous chapters for the purpose of eliminating errors, or debugging a program. A set of debugging prescriptions is presented in the fashion of chapters 2 and 3. The programming examples are given in the Ada language but the terminology should be clear even to those without a detailed knowledge of this language.

Problem Solving With Ada

Author(s)
Brian Mayoh, Aarhus U. Denmark

Published by:
John Wiley & Sons, Inc.
605 Third Avenue
New York, NY 10158

ISBN: 0471-886920
Number of pages: 240
Hardcover cost : $17.90

The primary subject areas include problem solving principles.

Chapter one of this book looks at how one can specify problems precisely and introduces the divide-and-conquer approach to problem solving. Chapter two describes the notions of algorithms, variables and parameters and tells how to convert algorithms into Ada programs and run them on a computer. Chapter three discusses several powerful ways of combining solutions of small problems into solutions of large problems: choice, repetition, recursion, exceptions and parallelism. Chapter four presents several useful environments to illustrate the slogan "Careful design of environments is the key to solving large problems in Ada." Chapter five explains the Ada type mechanism for finding conceptual errors in problem solutions. Chapter six contains various ways of structuring data. Chapter seven illustrates the Ada concepts of generic problem solutions by treating the important practical problem of sorting and searching. Chapter eight contains a history of computer revolution and a discussion of the real dangers that accompany this revolution.

Proceedings of the 1985 Ada International Conference

Author(s)
J.G.P. Barnes
G. Fisher

Published by:
ASSOC. FOR COMPUTING MACHINERY

ISBN: 30968-9
Number of pages: 366
Hardcover cost : $49.50

The primary subject areas include software engineering.

This collection of twenty-nine papers represent the work of leading experts in Ada from both North America and Europe. The papers were presented at the Ada International Conference held in Paris, May 14-16, 1985 under the sponsorship of SIGAda of ACM with the collaboration of Ada- Europe and the Commission of European Communities. The wide-ranging areas of discussion included applications to database and distributed systems, Ada design methods and implementation tools, compiler implementation, debugging, and Ada language issues and education.

Proceedings of the 3rd Joint Ada Europe and TEC Conference

Author(s)

Published by:
Cambridge University Press
32 East 57th St, NY, NY 10222
Attn: Paul Wehn
Publication date : 85

ISBN: 30102-5
Number of pages: 313
Hardcover cost : $39.50

The primary subject areas include software engineering.

Twenty-nine papers selected from the 3rd Joint Conference of Ada Europe and AdaTEC discuss questions relating to industrial experience, programming support environments, implementation, education needs, and software engineering methodology. The conference was held in Brussels on June 26-28, 1984 and was sponsored by the Commission of European Communities. It is the major European meeting on Ada and provides a forum for some of the foremost Ada experts.

Program Verification Using Ada

Author(s)
Andrew McGettrick, University of Strathclyde

Published by:
Cambridge University Press
32 East 57th Street
New York,NY 10022
Publication date : Aug 82

ISBN: 0-521 24215-0
Library of Congress: 81-12276
Hardcover cost : $39.50 Paperback cost : $17.50

The primary subject areas include advanced programming.

This book discusses all the important facets of program verification and guides the reader to a full knowledge and appreciation of its benefits. It uses the new Ada programming language, adopted by the U.S. Department of Defense as the language of choice, to express programs and support other discussions. All the aspects of the Ada language necessary to understand program verification are introduced as they are needed. The topic has recently gained in importance because of the increasing sophistication of software and the growing dependence on computers.

Programming Concepts with the Ada Language

Author(s)
Roy S. Freedman, Hazeltine Corp. & Polytechnic

Published by:
Petrocelli Books, Inc.
Research Park, 251 Wall Street
Princeton, NJ 08540
Publication date : 1982

ISBN: 0-89433-190-6
Library of Congress: QA76.73A35F73
Number of pages: 162
Paperback cost : $12.00

The primary subject areas include introductory programming.

This book is meant to help the reader understand the concepts discussed in the Ada Language Reference Manual and in the more formal literature on the Ada language. An overview of the language is presented in Chapter 1. Chapter 2 discusses Ada programming (control) structures. Ada data structures are discussed in Chapter 3; Chapter 4 discusses the Ada task mechanism. Finally, Chapter 5 shows how the Ada language may be used as a program design language for the specification of complex systems.

Programming Embedded Systems With Ada

Author(s)
V.A. Downes, Imperial College
S.J. Goldsack, Imperial College

Published by:
Prentice-Hall
200 Old Tappen Road
Old Tappen, NJ 07675

ISBN: 0-13-730010-7
Number of pages: 400
Paperback cost : $30

The primary subject areas include introductory programming.

This book is not intended for the beginning Ada language programmer. This is a book on how to use the Ada language in the embedded systems environment for which the Ada language was intended. The examples in this book were tested using the NYU compiler, and a full listing of a hospital patient monitoring system is given in the last chapter back of the book. The book centers on the monitor system as the main example. Some of the topics covered in this book are special problems of embedded systems, Ada language solutions to the problems of software building for large scale embedded systems, modeling the problem domain, building data structures and low level and real time features.

Programming in Ada

Author(s)
Richard Wiener, U. of Colorado, Colorado Sp.
Richard Sincovec, Western Software Development

Published by:
John Wiley & Sons, Inc.
605 Third Ave
New York, NY 10158
Publication date : 1983

ISBN: 0-471-87089-7
Number of pages: 345
Hardcover cost : $25.95

The primary subject areas include advanced programming.

The book's organization is straight-forward and logical. The first eight chapters deal with the basic control and data structures associated with the Ada language. This material is easily accessible to anyone with a knowledge of another high-level language. The second part of the book (chapters 9-16) is devoted to the powerful and advanced features that set the Ada language apart from other programming languages. Concepts associated with advanced programming and large-scale development and maintenance of software are discussed in detail. Convenient summaries at the end of each chapter reinforce the subject matter. The authors make extensive use of applications programs in data structures, numerical analysis, and algorithm design to support their explanations of Ada constructs and features. As new Ada language features are presented, some programs that were introduced earlier in the text are updated to demonstrate how these new features improve program design. All examples reflect proper programming style, and most of the programs have been checked and run to ensure their validity.

Programming in Ada (2nd Edition)

Author(s)
J.G.P. Barnes, Alsys, Ltd.

Published by:
Addison-Wesley Publishing Co.
Reading, MA 01867 also,
53 Bedford Square, London
Publication date : Aug 83

ISBN: 0201 13799-2
Paperback cost : $19.95

The primary subject areas include advanced programming, introductory programming, software engineering and problem solving principles.

This book is an overall description of programming in the Ada language. It is assumed that the reader will have a significant knowledge of programming in some high level language. A knowledge of Pascal would be helpful but is not strictly necessary. Most sections contain exercises. Solutions to all the exercises will be found at the end of the book. Various appendices are provided in order to make the book reasonably self-contained; they are mostly based upon material drawn from the Ada Language Reference Manual.

Programming in Ada (2nd Edition)

Programming in Ada: A First Course

Author(s)
Robert G. Clark, University of Stirling

Published by:
Cambridge University Press
Publication date : 04/85

ISBN: 25728-X/27675-6
Library of Congress: 84-14965
Number of pages: 217
Hardcover cost : $39.50 Paperback cost : $17.95

The primary subject areas include introductory programming.

This introduction to the Ada programming language requires little or no previous experience in programming. It shows how solutions can be used in the construction of reliable, large programs. The author concentrates on central features such as data types, subprograms, packages, separate compilation, exceptions, and files. In addition, he provides a large number of complete programs, all of which have been tested using both the University of York and the Data General/ROLM Ada compilers. The final version of the Ada language (ANSI/MIL-STD-1815A-1983) is used throughout the book.

The Programming Languages: Pascal, Modula, CHILL and Ada

Author(s)
C.H. Smedema, The Philips Group of Companies
P. Medema, The Philips Group of Companies
M. Boasson, The Philips Group of Companies

Published by:
Prentice-Hall
Publication date : 07/83

ISBN: 13/729796/4
Library of Congress: QA 76.7.S6 983 001.64 24 83 - 10929
Paperback cost : $16.95

The primary subject areas include introductory programming.

This book gives an informal introduction into the most important characteristics of Pascal, Modula, CHILL and the Ada language. The languages are discussed in historical order, one language per chapter and an introductory chapter. For every language chapter, the first section discusses briefly the history, application area, standardization aspects and future prospects. Wherever appropriate, corresponding facilities in the languages are mentioned. The various language facilities are introduced through many examples. Additionally, this book gives an introduction into concepts like modules and abstract data types, concurrency and generics.

The Programming Languages: Pascal, Modula, CHILL and Ada

Programming Languages: A Grand Tour, 2nd Edition

Author(s)
Ellis Horowitz, Univ. of Southern California

Published by:
Computer Science Press
Rockville, Md.
Publication date : 1985

ISBN: 0-88175-073-5
Library of Congress: QA76.7.P75159 1985 001.64'24 84-14214
Number of pages: 758
Hardcover cost : $43.95

This comprehensive anthology on programming languages contains an organized collection of articles and language reference materials for students of programming languages and professional computer scientists. Beginning with a history of programming languages, the book chronicles the appearance of each new language and its contributions, and emphasizes the difficulty of successful language design. It includes significant papers on the ALGOL family of languages, applicative programming languages, data abstraction languages, Ada (the language developed by the U.S. Department of Defense), and languages with concurrency features. The anthology contains a collection of complete language reference manuals which includes the most recent version of Ada, ALGOL 60, ALGOL-W, LISP 1.5, MODULA, and C. This book complements FUNDAMENTALS OF PROGRAMMING LANGUAGES and provides extra readings to use with the text. CONTENTS: Forward; Acknowledgements; Programming Languages: History and Good Design; The ALGOL Family; Applicative Languages; Programming Languages and Concurrency; More Languages for the 1980's; Bibliography; Index.

Programming with APSE Software Tools

Author(s)
Roy S. Freedman, Hazeltine Corp. & Polytechnic

Published by:
Petrocelli Books, Inc.
Research Park, 251 Wall Street
Princeton, NJ 08540
Publication date : 5/85

ISBN: 089433-220-1
Number of pages: 253
Hardcover cost : $27.50

The primary subject areas include software engineering.

The book is divided into five sections, concerning (i) the general (Stoneman) requirements associated with an APSE, (ii) the control and invocation of APSE resources, (iii) the management of APSE databases, (iv) APSE runtime support for incomplete and distributed Ada programs, and (v) APSE support for Ada software portability. The book is presented from the viewpoint of an APSE user. Each of the 21 chapters conclude with an annotated set of references and a few exercises for the reader.

Real-Time Ada

Author(s)
CENTACS/CECOM, U.S. Army

Published by:
CENTACS/CECOM
Paperback cost : $13.00

The primary subject areas include advanced programming and problem solving principles.

Government personnel may order this document from the Defense Technical Information Center (DTIC). Industry must order this document from National Technical Information Service (NTIS). The order number for both DTIC and NTIS is AD A146258. Real-Time Ada introduces concurrent programming concepts and provides exercises and solutions on selected topics in real-time systems. NTIS COST: Paper Copy: $13.00; Microfiche: $4.50 each.

Reference Manual For The Ada Programming Language

Author(s)
Jean D. Ichbiah, Head of the Ada Design Team

Published by:
Castle House Publ. Ltd.
Tunbridge Wells, England
Publication date : 4/83

ISBN: 0-7194-0097-X
Number of pages: 456

The primary subject areas include advanced programming and introductory programming.

The manual describes the real-time Ada programming language, designed in accordance with the United States Department of Defense requirements for use in embedded systems. Such applications typically involve real-time constraints, fail-safe execution, control of non-standard input-output devices and management of concurrent activities. The Ada language is intended as a common high order programming language and has the mechanisms for distributing large libraries of application programs, packages, utilities and software development and maintenance tools. Machine and operating system independence is therefore emphasized throughout its design.

Selecting an Ada Environment

Author(s)
G.L. Lyons, Software Sciences, Ltd.
J.C.D Nissen, GEC Software, Ltd.

Published by:
Cambridge Univ. Press
Publication date : 1986

ISBN: 32594-3
Number of pages: 250
Hardcover cost : $34.50

The primary subject areas include software engineering.

This guide to the selection of an Ada Programming Support Environment can also be used for the specification of such an environment. It assumes that an environment will support all phases of a project, not just programming. The book is written from the point of view of a potential user wishing to select environment, and provides questions to ask about the environment under consideration. It does not attempt to specify absolute requirements, but rather to indicate possible requirements, together with advantages and disadvantages that will need to be balanced by the reader according to his particular circumstances. Since most of the features of an environment are not programming-language-specific, this guide will also apply to non-Ada users.

Simulation in Ada

Author(s)
Greg Lomow, MSc
Theodore Trybul, PhD
Brian Unger, PhD

Published by:
Soc. of Computer Simulation
P.O. Box 17900
San Diego, CA 92117
Publication date : 1985

ISBN: 9111801065
Number of pages: 37
Paperback cost : $10.00

Proceedings from the Eastern Simulation Conference on simulation in Ada. The focus is on the use of Ada in the development of simulation and on methodology.

Simulation in Ada

Simulation in Strongly Typed Languages: Ada, Pascal, Simula...

Author(s)
Ray Bryant, PhD
Brian Unger

Published by:
Soc. for Computer Simulation
P.O. Box 17900
San Diego, CA 92117
Publication date : 1984

ISBN: ISSN 07359276
Number of pages: 167
Hardcover cost : $30.00

The primary subject areas include software engineering.

The importance of proper language design to the reliability, clarity and ease of implementation and maintenance of software written in strongly typed languages is emphasized. The topics are: simulation in Ada, simulation languages based on Pascal, graphics and animation in simulation, simulation environments, future directions in simulation software and case studies on Ada, Pascal and Simula. This book is part of the Simulation Series.

Simulation Software and Ada

Author(s)
Greg Lomow, MSc
Brian Unger, PhD
Graham Birtwistle, PhD

Published by:
Soc. for Computer Simulation
P.O. Box 17900
San Diego, CA 92117
Publication date : 1984

ISBN: 0911801030
Number of pages: 274
Paperback cost : $20.00

The primary subject areas include advanced programming and software engineering.

An introduction to software engineering and the relevance of the Ada programming language is offered along with detailed examples of the language. Advanced programming techniques as well as an in-depth exploration of the application of Ada and simulation software are presented.

Simulation Software and Ada

Software Engineering Concepts

Author(s)
Richard E. Fairley, Wang Institute

Published by:
McGraw-Hill
Publication date : 1985

ISBN: 0-07-019902-7
Number of pages: 364
Hardcover cost : $35.00

The primary subject areas include software engineering.

This text integrates all aspects of the software lifecycle. The author discusses both technical and managerial issues, and emphasizes the processes and work products of each phase in the lifecycle. The book is designed to offer readers a framework, as well as techniques and procedures, for developing and maintaining a software product and its supporting documentation. In particular, Chapter 7 describes the modern programming features of Ada and discusses the ways in which those features meet the needs of software engineering.

Software Engineering with Ada

Author(s)
Grady Booch, Rational Machines, Inc.

Published by:
Benjamin / Cummings Company
2727 Sand Hill Road
Menlo Park, CA 94025
Publication date : Feb 83

ISBN: 0-8053-0600-5
Library of Congress: QA76.73a35B66
Paperback cost : $19.95

The primary subject areas include introductory programming and software engineering.

"Software Engineering with Ada" has been written to satisfy the following three specific goals: (1) to provide an intensive study of Ada language features, (2) to motivate and give examples of good Ada design and programming style, (3) to introduce an object-oriented design methodology that exploits the power of the Ada language, and in addition, helps us manage the complexity of large software solutions. The text serves as a complete Ada language reference that is appropriate for both the programmer who wishes to create Ada systems and the manager who needs to understand how to apply this powerful tool.

Software Engineering With Modula-2 and Ada

Author(s)
Richard Wiener, University of Colorado
Richard Sincovec, University of Colorado

Published by:
John Wiley & Sons, Inc.
605 Third Avenue
New York, NY 10158
Publication date : 2/84

ISBN: 0-471-89014-6
Number of pages: 480
Paperback cost : $24.90

The primary subject areas include software engineering.

This is a book on modern software engineering. The book is designed to be used by undergraduate students in computer science as well as practicing computer science and software development professionals. Object-oriented design and modular software construction are emphasized. The practical state-of-the-art approach emphasizes application rather than theory and the "Modular Design Chart" supports users' efforts at practical design.

Software Engineering, 2/e

Author(s)
Ian Sommerville, University of Strathclyde

Published by:
Addison-Wesley Publishing Co.
Jacob Way
Reading, MA 01867
Publication date : 5/85

ISBN: 14229
Number of pages: 320
Paperback cost : $23.95

The primary subject areas include software engineering.

Software Engineering, 2/e gives a wide and detailed coverage of the essential disciplines of software engineering, beginning with the concept of the software life-cycle and exploring techniques of definition, specification and design, implementation in programming, testing, documentation, the user interface and management. Both technical and human aspects are examined, and emphasis is placed on producing software that is reliable, understandable and maintainable.

Software Specification Techniques

Author(s)
Narain Gehani, AT&T Bell
Andrew McGettrick, University of Strathclyde

Published by:
Addison-Wesley Publishing Co.
Jacob Way
Reading, MA 01867
Publication date : 5/85

ISBN: 14230
Number of pages: 600
Paperback cost : $34.95

The primary subject areas include software engineering.

This volume, edited by Narain Gehani and Andrew McGettrick, brings together for the first time key papers published by the world's leading authorities on software specification. These range from general principles to a variety of formal techniques, illustrating the experience gained in using these techniques and the automatic generation of prototype systems from the specifications. The book is organized into four sections: Requirements and Techniques; Particular Approaches; Case Studies; and Specification Systems. Each section begins with an introduction which sets each contribution in its context and provides continuity between the sections.

Studies in Ada Style

Author(s)
Peter Hibbard, Carnegie-Mellon University
Andy Hisgen, Carnegie-Mellon University
Jonathan Rosenberg, Carnegie-Mellon University
Mary Shaw, Carnegie-Mellon University
Mark Sherman, Carnegie-Mellon University

Published by:
Springer-Verlag
Publication date : 1983

ISBN: 0-387-90816-1
Library of Congress: QA76.73.A35S88 1983 001.64'24 82-19501
Number of pages: 111
Paperback cost : $12.00

The primary subject areas include advanced programming.

STUDIES IN ADA STYLE teaches modern programming techniques using descriptions and examples. The first part provides the historical background for modern programming methodologies and describes how abstraction techniques were refined in Fortran, Pascal and Ada. The second part shows some methods for writing reliable Ada programs by solving five practical problems: buffering queues, graph analysis, symbol table processing, terminal drivers and multiprocessor numerical relaxation procedures. For each problem, a complete solution is provided, followed by a discussion of alternative implementations and a critique of how the Ada language assisted or hindered the solution. By having complete Ada programs to study, students can examine the ways in which features of Ada interact, grasp the important practical elements of Ada without wading through language rules, and see how modern methodologies can be applied to real problems. STUDIES IN ADA STYLE illustrates modern programming methodology using Ada and provides excellent supplementary material for a course in programming languages or advanced programming. This book is indispensable for those learning to program in Ada.

Systems Design With Ada

Author(s)
R.J.A. Buhr

Published by:
Prentice-Hall
Publication date : 1984

ISBN: 0-13-881623-9
Hardcover cost : $21.95

The primary subject areas include advanced programming.

Audience: inexperienced to moderately experienced system designers, with or without some knowledge of the Ada language and/or Pascal. Material: system design concepts, methodologies and representations implementing the technique of object-oriented structured design. Remarks: uses graphical representations to link intuition formalism. This advanced text attempts to teach software system design, modularity and structure in an Ada programming environment. Many graphic examples are used to illustrate key points.

The Ada Programming Language (2nd Edition)

Author(s)
I.C. Pyle, University of York

Published by:
Prentice-Hall
Publication date : Mar 85
Number of pages: 336
Paperback cost : $23.95

The primary subject areas include advanced programming and software engineering.

Since its initial introduction, the Ada programming language has undergone major revisions. There is now an accepted ANSI standard. All the modifications under the language's new standard are charted in this completely updated 2nd edition of Ian Pyle's classic text on the Ada language - its facilities and features, new Ada programming concepts such as exceptions, packages and parallel programming, and its capabilities for those whose working environment will be changed by its implementation. Many examples of the Ada language are given - particularly in real-time computer systems - to emphasize its features. Extensive appendices are also provided which highlight the Ada language features for Pascal, FORTRAN, and CORAL 66 programmers with expertise in both real-time and non-embedded computer systems. A complete new set of syntax diagrams to guide the programmer through the intricacies of the Ada language are included, together with a wealth of end-of-chapter exe[illegible]

CREASE Version 4.0

Towards a Formal Description of Ada

Author(s)
D. Bjorner, Technical U. of Denmark
O.N. Oest, Dansk Datamatik Ctr.

Published by:
Springer-Verlag
P.O. Box 2485
Secaucus, NJ 07094

ISBN: 3-540-10283-3
Number of pages: 630
Hardcover cost : $29.00

This book consists of five papers. The first paper outlines the specific development methods used in a large scale, full Ada compiler and run-time system development project. The basis for the compiler is two fold: first a formal denotational and abstract semantics specification of the Ada language, including tasking; then an abstract compiling algorithm derived from the dynamic semantics specification from Ada code into A-code. The second paper covers the denotational semantics-like method for defining the statically decidable context conditions that Ada programs must satisfy. The third paper gives a formal denotational dynamic semantics definition of sequential parts of the Ada language. It describes the "meaning" of Ada constructs by state-to-state transformations on an abstract machine. The fourth paper tackles and solves the problem of modelling all the Ada tasking semantics as abstractly as possible and of embedding its parallel meta-process model in an otherwise denotational model of sequential Ada. The fifth paper formally defines a virtual machine. The design of the instruction set and state components of the machine is based on a semantic analysis of the basic concepts of the Ada language. The result is a high-level machine especially suited to run Ada programs.

Tutorial on Software Design Techniques (4th Edition)

Author(s)
Peter Freeman, U. of CA, Irvine
Anthony I. Wasserman, U. of CA, San Francisco

Published by:
IEEE Computer Society Press
Publication date : 1983

ISBN: 0-8186-0514-6
Library of Congress: 83-81873
Number of pages: 719
Paperback cost : $36.00

A compilation of reprinted papers and original material. This book is intended for both beginning and experienced designers, analysts, and managers needing a broad introduction to software engineering methods. The focus throughout is on the leading edge of practical software technology, with a few papers selected to show important research developments that are likely to affect practice within the next few years.

Tutorial on Software Maintenance

Author(s)
Girish Parikh, Shetal Enterprises
Nicholas Zvegintzov, Consultant in S/W Maintenance

Published by:
IEEE Computer Society Press
1109 Spring Street
Silver Spring, MD 20910
Publication date : Apr 83

ISBN: 0-8186-0002-0
Library of Congress: 82-83405
Number of pages: 357
Paperback cost : $32.00

The primary subject areas include problem solving principles.

A compilation of original material and reprinted papers. This tutorial explores maintenance in six parts. Part I, "The World of Software Maintenance" explores empirical and observational data on maintenance activity. Part II, "Understanding Software", deals with techniques for designing or reconstructing the development framework from an operation system. Parts III, IV, V and VI, respectively are on the modification of software, the evolution of software, the death of software, and the management of software maintenance. (IEEE is the Institute of Electrical and Electronics Engineers).

Tutorial: Software Configuration Management

Author(s)
William Bryan, CTEC, Inc.
Christopher Chadbourne, CTEC, Inc.
Stan Siegel, CTEC, Inc.

Published by:
IEEE Computer Society Press
Publication date : 1980

ISBN: 0-8186-0309-7
Library of Congress: 80-83084
Number of pages: 452
Paperback cost : $25

The primary subject areas include problem solving principles. Other application area(s) include product assurance and software configuration management.

A compilation of reprinted papers and original material, this tutorial focuses on attaining a high-quality software product through an approach based on the "stitch in time saves nine" adage. The spotlight of the tutorial is on the product assurance discipline of software configuration management.

Tutorial: Software Configuration Management

Tutorial: Software Cost Estimating and Life-Cycle Control: Getting the Software

Author(s)
Lawrence H. Putnam, Quantitive Software Management

Published by:
IEEE Computer Society Press
Publication date : 1980

ISBN: 0-8186-0314-3
Library of Congress: 80-83083
Number of pages: 349
Paperback cost : $25.00

Other application area(s) include life-cycle issues, cost estimating, and software.

A compilation of reprinted papers and original material. This tutorial is designed for engineers at the MS level or business management analysts at the MBA level. It reviews the nature of the cycle, explaining its characteristics and emphasizing the dominant influence of the independent variable of ume. Presenting a quantitative methodology of cost estimating, the tutorial discusses economics, trade-off opportunities, and investment strategies in a description of the managerial practices necessary for effective planning and control of software development.

Tutorial: Software Design Strategies (2nd Edition)

Author(s)
Glenn D. Bergland, Bell Laboratories
Ronald D. Gordon, Bell Laboratories

Published by:
IEEE Computer Society Press
Publication date : 1981

ISBN: 0-8186-0389-5
Library of Congress: 81-84179
Number of pages: 479
Paperback cost : $30

The primary subject areas include problem solving principles.

A compilation of reprinted papers and original material. This tutorial text clarifies and focuses on aspects of software design that have a direct effect on the structure of the final program. Because the structure of the program itself is the single most important determinant of the life cycle cost of a software project, a major portion of the tutorial is devoted to methods of structured program design.

Tutorial: Software Management (2nd Edition)

Author(s)
Donald J. Reifer, TRW Systems

Published by:
IEEE Computer Society Press
Publication date : 1981

ISBN: 0-8186-0396-8
Library of Congress: 81-85492
Number of pages: 502
Paperback cost : $30

The primary subject areas include problem solving principles.

A compilation of reprinted papers and original material. This tutorial provides both beginning and experienced managers with the materials they need to develop a thorough understanding of the basic theories, tools, techniques, and skills of software management. It encompasses the five basic functions of management: planning, organizing, staffing, directing, and controlling.

Tutorial: Software Development Environments

Author(s)
Anthony I. Wasserman, U. of California

Published by:
IEEE Computer Society Press
Publication date : 1981

ISBN: 0-8186-0385-2
Library of Congress: 81-84365
Number of pages: 476
Paperback cost : $30

The primary subject areas include problem solving principles.

A compilation of reprinted papers and original material. This book was created mainly as background material for professional development seminars on systematic software construction and on development environments.

Tutorial: Software Development Environments

Understanding Ada

Author(s)
Ken Shumate, Hughes Aircraft Company

Published by:
Harper & Row. Publishers, Inc.
10 East 53rd Street
New York, NY 10022
Publication date : Mar 84

ISBN: Q-06-046133-0
Paperback cost : $18.95

The primary subject areas include introductory programming.

The objective of this book is to provide a basic understanding of major Ada language features. It is intended to be a first book on the Ada language. Understanding Ada provides a simple introduction to the Ada language by first presenting the Pascal-like parts of the Ada language, then discussing improvements to Pascal, and finally introducing Ada's advanced features for encapsulation, error handling, and concurrent processing. Virtually the entire language is presented, however, the discussion is at an introductory level and avoids complex issues and subtle interactions. The material and style of presentation are based on Ada seminars taught by the author since 1981. The manuscript has been used both for Ada overview and for hands-on programming courses. The book is suitable for programmers beginning their study of the Ada language, or for technical managers who wish to understand major language issues. Each chapter contains an exercise for the reader. The exercises are intended to be easy. Each exercise is followed immediately by a solution and a discussion of the solution that addresses issues raised by the exercise. Each of the solutions is presented as a complete Ada program. The programs have been compiled and executed on government validated versions of the NYU ANSI-Ada/Ed translator and the ROLM/Data General Ada compiler.

Understanding Ada: A Software Engineering Approach

Author(s)
Gary Bray, Intermetrics, Inc.
David Pokrass, Motorola, Inc.

Published by:
John Wiley & Sons, Inc.
Publication date : 3/85

ISBN: 0471-87883-2
Library of Congress: QA76.73.A35B73
Number of pages: 352
Paperback cost : $20.45

The primary subject areas include advanced programming and software engineering.

Assumes familiarity with another high level language. The book describes Ada, emphasizing the features that support software engineering.

5. OTHER INFORMATION

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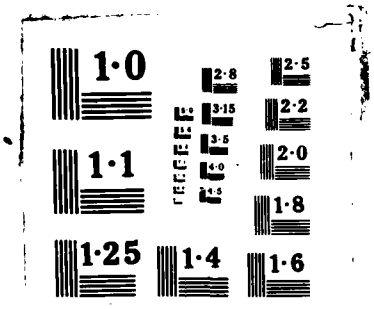
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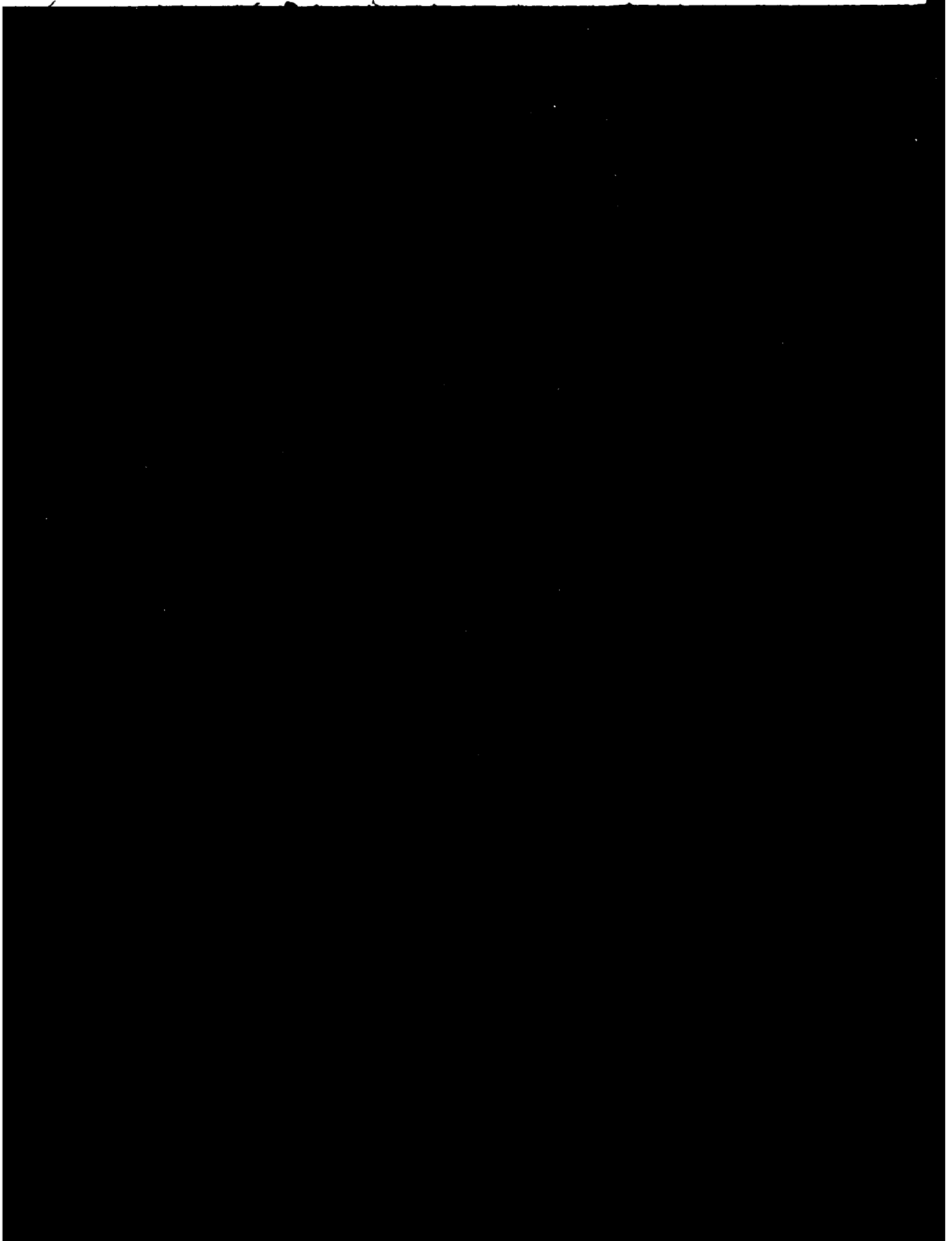
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